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ABSTRACT

The purpose of this study was to research the effects of declining enrollments on instructional programs and supervisory practices. A review of the literature in part 1 indicates a lack of empirical studies of instructional program effects, compared to other areas of education. Part 2 discusses a survey of 320 school districts across the country concerning the effect of enrollment changes on staffing patterns, instructional issues, demographics, and specific curriculum areas. The results of the research (part 3) show that as overall school enrollments decline, so do student enrollments in various courses of study, especially language arts, social studies, and science. In order to retain these courses, the study suggests educators experiment with different instructional modes and employ educational technology to diversify instructional alternatives. An extensive bibliography is included. (Author/LD)

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# THE EFFECTS OF DECLINING ENROLLMENTS ON INSTRUCTIONAL PROGRAMS & SUPERVISORY PRACTICES IN PUBLIC ELEMENTARY AND SECONDARY SCHOOLS

A Project Sponsored by the Association for Supervision and Curriculum Development (ASCD)

by

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# An Overview of the Study

## Introduction

In the past ten years, American public elementary and secondary schools have been confronted with a problem that has been beyond the prior personal experience of most administrators, that of declining enrollments. Not since the depression years of the 1930's have school administrators had to deal with problems of underutiliztion of space, reduction in labor force, and budgetary cutbacks for a prolonged period of time. After World War II, the "baby boom", combined with an expanding economy, resulting in swelled school enrollments and an emphasis on mass education as a societal priority. There followed nearly thirty years of unprecedented growth of American education. Suddenly, it seems, the growth stopped and the enrollment trend reversed direction. Because most educators were accustomed to growth, they were largely unprepared to accept the reality of nongrowth and declining enrollment, least of all being able to deal with the problem.

In the past three years, 1976-1979, there has been an abundance of suggestions on how to deal with the problem of declining enrollments. Because of the financial structure of American education, however, most of these recommendations have concentrated on the effects of declining enrollments on capital issues. Prevalent in the professional literature are articles with titles such as "How To Cut Your Staff", "Closing Schools Without Alienating Your Community", or "How To Get the Most Out of Your State Finance Formula". Few studies have looked at declining enrollments as an opportunity for improving education. Fewer still

have focused on the instructional aspects of enrollment declines. Thus, there is a need to ascertain the effects of declining enrollments on the institutional process. It is with this need in mind that this study was undertaken.

This study has a threefold purpose; first, to examine the literature to determine both causes and trends of enrollment decline; second, to disclose the experiences of school districts with declining enrollments; and third, to determine the effects of declining enrollment on instructional programs and supervisory practices. These three research issues were investigated through the following means:

1. A thorough review of the literature was undertaken to assess the causes, patterns, and effects of declining enrollments;
2. An analysis of studies of declining enrollment histories of school districts to ascertain findings, conclusions, and recommendations;
3. A nationwide survey of 92 school districts was used 1) to assess the current effects of declining enrollments on instructional and supervisory programs and 2) to determine how school administrators are coping with the problem.

This research report is organized in three sections. Part I reports the results of the review of the literature on the topic of declining enrollments. Part II presents the methodology, findings, and conclusions of the survey of the effects of declining enrollments on instructional programs and supervisory practices. Part III contains a discussion of strategies and recommendations for coping with enrollment changes in school districts.

# PART I

## Declining Enrollments in Public Elementary and Secondary Schools: A Review

### The Causes of Enrollment Decline

Declining enrollments is an ubiquitous phenomenom that is occurring not only in the United States but in Canada as well. A combination of forces contributed to the problem - improved contraceptive techniques, changing views of the woman's role and the family, economic conditions, demographic shifts, etc. Just as these causes are complex and interrelated, so are the effects of declining enrollments. The complexity of the issue has been a major reason why enrollment declines have been so difficult to assess and to deal with.

The economic boom years following World War II had a profound affect on school enrollments. Many of the returning war veterans found good jobs and settled down to raise families. The number of births soared, and eventually these children found their way into the school systems. This trend continued into the 1960's when the United States entry into the Vietnam War brought an even higher level of economic activity. While war related economic activity usually serves as a precondition to increase birth rates, the uncertainty and instability of the Vietnam Era reversed the trend. A dramatic restructuring of social mores occurred. Family planning became more predictable and the ecological impact of over population became a major concern.

The availability and acceptance of oral contraceptives have made family planning much easier. Recent changes in values about child bearing and legalization of abortion has furnished another method of

family size control. These techniques have had a considerable influence on the birth rate. However, fluctuation in the birth rate is not new to U.S. society. In the late 1800's it was not unusual for families to average eight or nine children. In the 1920's the fertility rate declined because of the economic conditions. The fertility rate (children per woman of childbearing age) bottomed out at approximately 2.5 in 1930. This low rate remained fairly stable until 1947 when it started to increase dramatically. In the early 1950's the birth rate was 3.8. However, in 1957 the number of births in the United States peaked and then started to decrease. In 1972, the birth rate reached 2.2 and stabilized although some demographers place the 1978 average birth rate at 1.9.

Other Causes of Enrollment Decline

The change in the birthrate is probably the major cause of the school enrollment decline but certainly not the only cause. Not only are women having fewer children but they are starting to have them later in their adult lives. Also, the changing view of the role of women in society has reduced the number of women getting married and having children.

The declining birthrate and number of families in the United States was not recognized as a problem for a number of reasons. First, as late as the mid 1960's demographers and educators failed to recognize the indicators on the horizon that would cause them to revise their estimates of the future populations. This is partly due to the fact that the data were not generally collected and available. There was also a pervasive belief that the growth

patterns that have been occurring since the early 1950's were good and in the country's best interests. Because of the booming economy, most people felt that the social problems could be solved by spending more money. Also during the 1950's and 1960's, Americans were becoming increasingly more mobile. Families were moving out of the cities into the suburbs. Transportation was relatively inexpensive, so the population became more spread out. Because of these population shifts, the effects of the declining enrollments were not readily recognized.

## Patterns and Trends of Decline

Declining enrollments are found throughout the United States and in all levels of public education. However, that is not to say that all school districts are facing enrollment declines. There are patterns to the decline, and the extent of the decline changes over time.

In 1950, the total public elementary and secondary school enrollment was approximately 28.5 million students - 22 million students in the elementary schools and 6.5 million in the secondary schools. By 1971, the total number of students had risen to slightly over 46 million students, an increase of 61.7 percent. Table 1 shows the yearly increase of students from Fall, 1954 to Fall, 1977. Davis & Lewis (1976) report the total student count in 1970 was approximately 52 million, with 37 million in the elementary schools and 15 million in the secondary schools. The discrepancy between their data and the data listed in Table 1, which was compiled by the National Center for Educational Statistics (NCES) is due to the fact that Davis & Lewis included private and public school students, whereas the NCES tallies included only public school enrollments. Regardless of the exact figure of total pupils, the phenomenal increase in school populations between 1950 and 1970 created a "mind-set" or an expectation of unlimited growth and expansion.

Starting in 1970, as shown in Table 1, the enrollments in the public schools started declining noticeably, from a high of 46 million in 1970 to a low of 43.7 million in 1977. This represents

TABLE 1

NUMBER OF PUPILS IN UNITED STATES (FALL 1954 THROUGH FALL 1977)

| Fall | Membership | Percent change over previous year |
|---|---|---|
| 1954 | 29,548,805 | -- |
| 1955 | 30,680,183 | 3.8 |
| 1956 | 31,718,732 | 3.4 |
| 1957 | 32,951,426 | 3.9 |
| 1958 | 34,080,844 | 3.4 |
| 1959 | 35,182,343 | 3.2 |
| 1960 | 36,281,294 | 3.1 |
| 1961 | 37,464,074 | 3.3 |
| 1962 | 38,748,907 | 3.4 |
| 1963 | 40,186,751 | 3.7 |
| 1964 | 41,416,421 | 3.1 |
| 1965 | 42,173,764 | 1.8 |
| 1966 | 43,039,199 | 2.1 |
| 1967 | 43,891,449 | 2.0 |
| 1968 | 44,943,904 | 2.4 |
| 1969 | 45,618,578 | 1.5 |
| 1970 | 45,909,088 | 0.6 |
| 1971 | 46,081,000 | 0.4 |
| 1972 | 45,744,000 | -0.7 |
| 1973 | 45,429,497 | -0.7 |
| 1974 | 45,053,272 | -0.8 |
| 1975 | 44,790,946 | -0.6 |
| 1976 | 44,317,000 | -1.1 |
| 1977 | 43,730,964 | -1.3 |

Source: Foster, B.J., and Carpenter, J.M., Statistics of Public Elementary and Secondary Day Schools, 1977-1978 School Year (Final), National Center for Education Statistics, 1979.

a drop of 6 percent. Why? The number of births in the "baby boom" peaked in 1957 and started to decline. From the high of 3.8 in 1957, the birth rate decline steadily until it reached a record low of 1.8 children per woman in 1977. The current (1978) Census Bureau Series II estimate of the average birth rate is 2.1.

If this birth rate of 2.1 children per woman of childbearing age is used in population projections, the following forecasts are produced. There will be a 19 percent increase of 5 to 13 year olds between the years 1980 and 2000. Secondary enrollments are expected to decline until 1990 and then increase about 6 percent from 1990 to the year 2000. Thus, even though education is presently experiencing a period of decline, populations predictions by the Bureau of the Census predict that this decline will end and be replaced by a modest increase in births and enrollments.

Based on the 2.1 fertility rate, Davis and Lewis (1976) projected that the elementary school age population will increase 4.4 million with most of the increase occuring towards the end of the 1980's. The low point of the enrollments is expected to occur in 1982, and rise from that point. This would put the elementary enrollment in 1990 at 33.8 million which would fall short of the peak elementary enrollment of 37.1 million which occurred in 1969. For secondary enrollments, at a fertility rate of 2.1, the 14 to 17 year old population will continue to steadily decline until 1990. In 1990, there will be 4 million fewer secondary students than there were in 1975.

There is one subset of student populations which is expected to increase over the 1980's. This is the special education students.. National research estimates predict that approximately 11% of the student population will need special education services. This will require an increase in special education personnel and increased funding to conduct the programs that are required.

Another consideration to be taken into account when examining the demographic background of student enrollment patterns on the national level is the geographic distribution of the populations. Davis & Lewis noticed two major trends. The first is the migration out of the metropolitan areas to the suburbs. The second major trend is the development of nonmetropolitan areas which grew 4.2% as compared to only 2.9% growth for metropolitan areas from 1960 to 1970. The implications of this fact are that while the urban centers will continue to experience declining enrollments, declining enrollments of suburban areas and towns will be offset by the influx of students from the cities.

## The Effects of Declining Enrollments on Public Elementary and Secondary Schools

Declining enrollments effect all levels and areas of education. Because of this, it is difficult to enumerate all of the specific effects of decline. However, an overview of the effects of enrollment decline on education in general is possible. It is also desireable to review the environment in which education operates since this also has an impact on the effects of declining enrollments.

### Political Effects of Enrollment Decline

In the growth economy of the 1950's, education was considered "good" and necessary for continued social growth and prosperity. By the 1970's this feeling had changed significantly as evidenced by the growing frequency of bond referendum defeats, imposed tax ceilings, and tax cuts such as Proposition 13 in California. Ewald Nyquist succinctly stated the prevailing political attitude towards education in the mid 1970's:

> Education is declining, not rising, in the ladder of public priorities. It is severely depressed in the national hierarchy of values and occupies a much lower rung on the ladder of priorities than it did in the last two decades. And there is a wave of antischool feelings across the land that is almost unbelievable in a nation that labored so long to expand educational opportunities for the greatest number of people from all walks of life, going back to the time of the Founding Fathers.... What do we so often hear...? As I said earlier, seemingly endless denigration of education, particularly by political authorities who are making poltical hay by saying that education costs too much, that schools are failing, and that too many students are in college when there aren't enough jobs to go around. (Nyquist, 1976; 8-9).

The National School Public Relations Association (NSPRA) states: "Throughout the country, there is a general feeling of disillusionment with the public institutions of our society. Education is but one of

these, experiencing the impact of slackening support from a once totally committed patronage."

Scott, Hickcox, & Ryan (1977) predict by 1980, probably 2 out of every 3 taxpayers will be non-parents, therefore, it will not be long before out citizenry realized that 25% of their rents go into taxes and over one half of this tax bill goes into education. If these nonparent taxpayers become organized opponents , they could have a serious impact on funds appropriated for education. A reduction of funds because of these reasons would have a major effect on all facets of education. Campbell (1974) argued that there is proportionately less money available for public education today than there was in the 1950's and 1960's. He also believes that the political strength of public education is decreasing and will continue to do so due to:

1. shifts in the U.S. population characteristics (i.e. greater numbers of aged populations demanding more public services) whose funding is in direct competition with education,
2. public opinion polls showing that since 1969, a decline in support for public education among its traditionally strongest supporters (high SES and education persons) is evident,
3. school enrollment declines coincide with public discussion on research showing little relationship between spending increases for education and student achievement.

The main point to be drawn from these comments is that declining enrollments is occuring in a time of low to negative opinions and attitudes towards education. This is an important point for educational leaders to be aware of when making decisions concerning declining enrollments. But being aware of the problem may not be sufficient. Scott, Hickcox & Ryan (1977) recommend the use of a public relations campaign to display education as "good" and offset the negative senti-

ment towards it.

Another factor arousing public opinion about declining enrollments is potential effects of school closings on various constituents. School closings, one of the major effects of enrollment declines, will unavoidably alienate some voters. For decades, school related activities have meant meaningful involvement for many parents and a source of personal need fulfillment for many mothers. These individuals are likely to be strongly opposed to a school closing. For others, such as principals and teachers, school closings represent a threat to their job security. For students, a school closing many mean busing to a neighborhood farther away, the loss of contact with friends, the destruction of neighborhood solidarity and the fear of entering a new environment. Administrators dealing with declining enrollments may not be able to eradicate all the opposition to a school closing, but they can reduce the degree of alienation if they proceed with caution, concern and consideration for everyone involved.

## The Economics of Declining Enrollments

The most visible effects of declining enrollments are economic. The National School Public Relations Association (1976; 6-7) has suggested, "The costs of operating a school system are rising, while the revenues, especially in those districts experiencing severe enrollment decline, are decreasing." Inflation and increasing salary and energy costs are pushing the costs of educational operations upwards. Many taxpayers believe that school costs should level out or drop because of a decline in enrollments, but this is unlikely. Reduction in force (RIF) is difficult because of contractual agreements. When RIF does occur, it mainly involves newer staff members who are low on the salary scale. Inflation pushes up the costs of operating at a rate of 9% or more a year. Energy costs keep rising at increasing rates. Table 2 displays the annual expenditures and average daily membership in public elementary and secondary schools from 1959 to 1978.

As seen in Table 2, beginning in 1971 the average daily membership began to fall, while the total expenditure and the per pupil expenditure kept rising, albeit at a decreasing rate percentagewise. From the rather large percentage increases in expenditure and per pupil expenditure in 1975-76 compared to the decrease in the number of pupils, it is no wonder that the public has developed a negative attitude towards education.

The primary financial problem faced by school districts with declining enrollments is "how to reduce expenditures in proportion to decreased revenues." Because revenues are tied to enrollments because

TABLE 2

Expenditures and Enrollment (1959-1978)

| Year | Total Expenditure ($) | Annual Percent Change | Average Daily Membership (ADM) | Annual Percent Change | $/ADM | Annual Percent Change |
|---|---|---|---|---|---|---|
| 1959-60 | 15,613,255,000 | | 35,182,343 | | 443.78 | |
| 1965-66 | 26,248,026,000 | +11.4 | 42,173,764 | +3.31 | 622.38 | + 6.71 |
| 1967-68 | 32,977,182,000 | +12.8 | 43,891,449 | +2.04 | 751.34 | +10.36 |
| 1969-70 | 40,683,429,000 | +11.7 | 45,618,578 | +1.97 | 891.81 | + 9.35 |
| 1971-72 | 48,050,283,000 | + 9.1 | 46,081,000 | +0.51 | 1,042.74 | + 8.46 |
| 1973-74 | 56,970,355,000 | + 9.3 | 45,429,497 | -0.71 | 1,254.04 | +10.13 |
| 1975-76 | 70,829,345,000 | +12.2 | 44,790,946 | -0.71 | 1,581.32 | +13.05 |
| 1977-78 | 81,097,000,000 | + 7.2 | 43,730,964 | -1.19 | 1,854.45 | + 8.64 |

Source: Foster, B.J., and Carpenter, J.M., Statistics of Public Elementary and Secondary Day Schools, 1977-1978 (Final), the National Center for Educational Statistics, 1979.

of the state aid formulas, the essential task is to reduce expenditures with enrollments.

The educational expenditure picture is further complicated by the fluctuations in population migration that causes over-capacity schools in some areas and under-capacity schools in other areas. There is also the question of when pupils should be counted for state aid payments, since the number of pupils in the school district varies considerably throughout the academic year.

Declining enrollments affects the economics of education in other unique ways. In the period of growth, money was fairly easily obtained and was often used by the school administrators to control the level of conflict among interest groups in the school district. Money was often used as the resource buffer between conflicting groups. As this buffer is eliminated administrators can no longer "buy" their way out of problems, but are becoming forced to use other alternatives to satisfy the needs of diverse pressure groups. The predictable result of the elimination of the "economic buffer" is that the level of conflict in school districts has risen.

The loss of this "loose" source of funds is having another negative effect on education. Administrators often used "bribes" of cash to induce teachers to experiment with innovative educational programs. In any organization, there is a tendency to maintain the "status quo" unless some change agent is present. With this "cash incentive for change" gone, innovation and change through incremental additions has become lessened.

Finally, along with the reduction in funds for school districts,

recent research demonstrates that more education is not necessarily better. Studies of educational production have shown that it is not clear that pupil achievement is affected by reductions in the pupil teacher ratios or the increase in per pupil expenditure. If this is the case, what justification is there for increased expenditures by school districts?

## Organizational Impact of Declining Enrollments

With declining enrollments, staffing policy decisions are inevitable. There are two basic choices: (1) lower the pupil/teacher ratios and hope for corresponding educational quality changes, or (2) reduce staff through a number of methods and retain high pupil/teacher ratios. Staff reduction is a volatile issue. In an era of collective bargaining, tenure laws and affirmative action, it can be a difficult problem to solve. Lombardi (1974) concludes that staff reduction will present the least amount of problems when objectives are clearly defined, and procedures are carefully developed to guarantee due process. He also recommends that the faculty participate in policy development, receive early warning of possible reductions, and that viable opportunities are provided for reassignment, retraining, and rehiring of staff.

The effects of reduction in force is not restricted to the dismissed staff solely. Reduction in staff tends to lower the morale of the teachers who remain and may lead to distrust and disruption in a faculty that can last for years. The staff members that are dismissed are usually the low seniority and young staff members. A consequence of this is that the average age of the faculty will be older and, generally, less flexible and innovative. Such a change will require staff development programs to offset these effects. Declining enrollments mean less promotion and mobility in the educational administration hierarchy which is another factor that contributes to lower teacher morale. Declining enrollments which result in staff reductions usually mean increased workloads for the

remaining staff which further affects morale. These effects on morale are heightened by the fact that salary increases may be reduced or even eliminated entirely.

One example of significant staff reduction is occuring in the State of Michigan. Between 1977 to 1980, Michigan is expected to cut 14,600 teaching positions, 6,447 at the secondary level, 4,400 elementary level, and 3,700 in special teaching areas such as art, music, and physical education. It will be interesting to watch the impact and results of such a sizeable reduction.

It appears, then, that declining enrollments will produce a more stable, aging staff which will require more in-service and staff development programs to keep them informed of the advancement in educational innovations. Educational leadership is aging too. The "last in, first out" rule for institutional staff reduces the pool of potential administrators.

Another area of organization that declining enrollments affect is facility utilization and school closings. Population migration may result in overcrowding in one school and underutilization in another school in the same district. The literature is replete with guidelines and recommendations on deciding when to close a school and how to reduce maintenance costs on buildings that are underutilized. The radio program "Options in Education" broadcast by National Public Radio stated recently that while enrollments will be declining on a national level until 1983-84 in the elementary schools, $10 billion dollars per year will be spent on new classroom

spaces (September 5, 1977). This same program also reported that nationally, schools are closing slower than enrollments are declining. In 1963, there were 94,000 schools with an average enrollment of 445 students per school. By 1973, the number of schools had dropped to 88,000 with an average enrollment of 515. In 1978, there were 88,025 public elementary and secondary schools serving 43,730,964 pupils with an average enrollment per school of 497.

Nyquist (1976) believes that a new style of management is needed to cope with the problems of decline. He calls it "management of decline" or "decremental planning." This style of management realizes that no single strategy will apply in every situation, at all levels of education, but that each school district, county, and state will have to deal with their respective aspects of decline. The problem may even vary from principal to principal within the same school district. The roles which each administrator must perform will differ as well. To effectively meet the challenges of declining enrollment in all its aspects will require communication and cooperation between the various levels of education. A clear definition of roles and boundaries for each level of education with regards to declining enrollments is essential in order to avoid duplication of effort and confusion.

Declining enrollments present administrators with numerous and complex problems that will require more than management skills. Because most of America's experience in education has been with growth, special preparation is required to learn how to deal with decline.

Such professional preparation must emphasize long-range planning skills, organizational skills, and forecasting skills which will enable the educational leaders to deal creatively with decline. As stated earlier, education enrollments are expected to begin an upswing in the late 1980's. Unless administrators are prepared for both growth and decline, there will be as sluggish a response to growth as there was in the late 1960's to decline. Educational management needs to be replaced by educational leadership.

## Effects of Declining Enrollments on Instructional Programs

In spite of the furor over the effects of declining enrollments on all aspects of education little exists in professional literature relative to instructional programs. What little does exist tends to be extrapolations from the effects in other areas. Also, there is little empirical data concerning programmatic changes caused by declining enrollments. A 1977 report by the Michigan State Department of Education illustrates these general tendencies. It predicts a reduction in staff will most likely lead to a reduction in instructional program offerings. Presumably, declining enrollments will make it fiscally impossible to maintain course with low enrollments, especially electives.

Zenke & McCloud (1978), using demographic projections profiles predict the precentages minorities and educationally disadvantaged students will increase in the large cities. Such a change in school populations may alter program priorities and require adaptation of curriculum and faculty to meet these expectations. Several other authors, (e.g. Coleman, 1973; Cronin, 1974; Nyquist, 1976) are optimistic about the implications of declining enrollments for learning and instruction. They see declining enrollments as an opportunity to improve educational quality without necessarily increasing costs , if new instructional designs, alternative student grouping patterns, team teaching, reduced pupil-teacher ratios, more educationaly technology, and imaginative utilization of space are employed.

Roedekohr (1973), concluded from his empirical study of declining enrollments in school districts in Colorado, that adaption and time are very important factors in dealing with the situation. These conclusions are derived from his findings which show large school districts react differently to declining enrollment than small school districts, and large school districts can adapt to declining enrollments better than small districts because they have more options and alternatives available to them. He also found school districts with declining enrollments have lower drop-out rates and higher achievement scores, hire fewer teachers capable of teaching in more than one subject area, and attempt fewer educational innovations, and experience problems in maintaining a comprehensive educational program.

Despite the fact the Roedekohr study was pioneering in the area of declining enrollments in many respects, it has some shortcomings. The principal one is the size of the sample. He did not analyze enough school districts with declining enrollments to make conclusive generalizations, nor did he examine what school districts did as they experienced varying degrees of decline.

The Minnesota Department of Education(1976), found, in its case study of school districts with enrollment declines, that while there were staff cut-backs, program cut-backs did not occur. Instead, districts adjusted by modifying the length of time allocated to different courses within a school year. For example, one-year courses were compressed into one semester.

The Legislator's Education Action Project (1976) conducted interviews with school districts experiencing declining enrollments in five states. When asked what the effect of enrollment decline was on their districts, the school administrators responded consistently with: (1) lower pupil-teacher ratios; (2) more space available for educational programs; and (3) increased quality in teaching staff because of greater choice.

Another area of education that has received a great deal of attention in the literature concerning declining enrollments in adult education. Because of decreasing post-secondary institution enrollments, universities and colleges are expanding adult education programs to avoid staff cutbacks. Classes in these programs are often taught by lower paid, part-time staff, and the excess salary saving are used to support the regular educational programs, Carp, et al. (1974) estimate that 80 million adults in the United States would like to undertake further education and training. They also state that the "baby boom" children are now of the ages when they are most likely to be interested in adult education courses, so now is the time to expand adult education.

## Summary Of The Effects Of Declining Enrollments

Several conclusions can be drawn from the preceding review of literature on declining enrollments. These include:

1. The causes and consequences of declining enrollment are numerous, complex, and interrelated. These include political, economic, demographic, organizational, and components that need to be considered in order to obtain a comprehensive understanding of its origin, nature and implications.

2. Declining enrollment affects all levels of education-federal, state, county, district, building. However, the pattern of declining enrollment vary across school levels and even within the level.

3. The main- but not the sole- cause of declining enrollment is the reduction in the fertility rate from its peak of 3.8 children per woman in 1957 to the record low of 1.8 children per woman in 1977.

4. Projections on the nationwide declines in school enrollment expected between 1972 and 1972 varies. The percentages range from 10 to 18. The exact figure for each area will depend upon population migration, population characteristics, local economy, housing development, etc.

5. A decline in the relative number of youth and an increase in the relative number of 25 + years age group will continue. This will have numerous effects upon our society, politics, economy, and educational system.

6. The ethnic structure of the country's population is not expected to change much between 1980 and 1990. However, their geographic location and distribution will be of greater significance than a change in number relative to school enrollment patterns.

7. On a national scale, that segment of school enrollment populations which receives special education services is expected to continue to increase within the next 5-year period.

8. Declining enrollment is occurring at a time when education's public image is poor, and education is low on the ladder of public expenditure priorities.

9. School closing and staff reductions may produce litigation and low morale.

10. School operating costs are rising, while the revenues- especially in those experiencing severe enrollment declines- are decreasing.

11. State funding policies towards schools that make allocations based upon enrollment will need to be changed in an era of declining enrollment.

12. Declining enrollment means hiring fewer new teachers and overall staff reductions. Less promotion and mobility in

education's employment hierarchy are other probable outcomes. The average age of the teaching staff will increase and the staff is likely to become more stable. Salaries may be reduced or salary increments will be smaller and less frequent. Teachers' workloads may increase as a result to saff reductions. All of these factors will probably lower teachers' job satisfaction and cause a decrease in morale.

13. Declining enrollments could be a blessing in disguise, since a reduction in quantity does not necessarily mean a reduction of quality. With appropriate foresight, planning, and management, the quality of education can be maintained, and possibly improved, while holding costs stable.

14. The impact of declining enrollment calls for a new style and form of educational administration. It has been labeled "management of decline" or "decremental planning." There is a greater need for educational leadership which goes far beyond educational management.

# PART II

## An Empirical Analysis of the Effects of Population Changes on Instructional Programs.

### Introduction

The review of literature on the effects of declining enrollments showed that instructional program effects were sadly neglected, compared to the other areas of the educational enterprise. In all areas, there was a lack of data-based empirical studies concerning the effects of declining enrollments, to substantiate professional "hunches" and impressionistic contentions. The study was undertaken to disclose some of these "hunches" and to provide empirical evidence to support or refute these contentions.

To accomplish this purpose, a questionnaire (see Appendix A) was mailed to 320 school districts across the United States. The districts surveyed were selected from the published list compiled by the U.S. Office of Education. The sample was stratified according to three criteria:

(1) pupil enrollment of the school district (ADM) in 1977. There were two categories for size, over 10,000 but less than 100,000, and under 10,000.

(2) H.E.W. Region of the United States - the: NorthEast, Midwest, South, and West.

(3) percent student population change (ADM) from 1970 to 1977 - there were five basic categories: increasing greater than 5%, +5% to -5%,-6% to-10% -11% to -20%, and greater than -20% decrease.

The questionaire asked the responding school districts to respond to a number of questions regarding the extent to which declining enrollments effected their instructional programs. The districts were asked to limit their reported effects to changes that occurred from 1970 to 1977. Altogether, over 120 questions were asked with emphasis on the following areas: staffing patterns, instructional technology changes, demographics, and instructional program content areas. Most information was obtained through objective type questions, but there were several open-ended questions asking for the uniques aspects of the respondees educational situation. The questions asked in the survey are listed in Appendix A.

Table 3 shows the number of sample school districts in each strata and the number of responses received

TABLE 3

School Districts Surveyed

| | School Districts - Total N=95 | | | |
|---|---|---|---|---|
| | Under 10,000 Pupils | | Over 10,000 Pupils | |
| Enrollment Criteria | #Questionaires Sent | #Responses Received | #Questionaires Sent | #Responses Received |
| >5% increase | 40 | 16 | 40 | 13 |
| +5% to -5% | 40 | 4 | 40 | 10 |
| -5% to -10% | 25 | 8 | 25 | 11 |
| -10% to -20% | 25 | 6 | 25 | 4 |
| -20% to -80% | 25 | 12 | 25 | 11 |
| Totals | 155 | 46 | 155 | 49 |

As seen from Table 3, the response rate was 31 percent. The responses were fairly evenly distributed among the strata. Also, there were responses in all cells of the strata.

To determine whether large school districts were responding differently to decling enrollments than small school districts, data were analyzed using crosstabs to examine the relationships between size and all discrete variables. Tables 4 to 7 compare the characteristics of the sample of small and large school districts. Table 4 shows that a larger percentage of the small school districts have desegregated by court order than the large school districts, and that a larger percentage of the large school districts are not desegregated.

The drop-out rate for large school districts in the sample has increased for more school districts than the small districts. About the same percentage of large and small districts have experienced no change in their drop-out rate between 1960 to 1978.

The majority of both size districts say they have experienced a median age change in their staff since 1970. A greater percentage of the large school districts stated that their median staff age has increased, while the small districts claim that their staff's median age has decreased.

More large districts have instituted an early retirement policy than the small districts, while a small percentage of both size districts have instituted a later retirement age policy. However, the majority of the districts have had no change in their retirement policy since 1970.

TABLE 4

The Effect of School District Size on District Personnel Policy

| | School District Size | | | |
|---|---|---|---|---|
| | Over 10,000 Pupils | | Under 10,000 Pupils | |
| Policy Variable | no. of responses | percent | no. of responses | percent |
| Desegregated? | | | | |
| No | 22 | 50 | 15 | 41 |
| Voluntary | 21 | 48 | 18 | 49 |
| Court-Ordered | 1 | 2 | 4 | 10 |
| Drop-Out Rate Change? | | | | |
| No | 20 | 44 | 20 | 46 |
| Yes, increase | 12 | 26 | 8 | 19 |
| Yes, decrease | 14 | 30 | 15 | 35 |
| Staff Median Age Change? | | | | |
| No | 6 | 16 | 7 | 17 |
| Yes, older | 29 | 63 | 18 | 43 |
| Yes, younger | 11 | 24 | 17 | 41 |
| Teacher Retirement Policy Change? | | | | |
| Early retirement | 15 | 33 | 5 | 13 |
| Later retirement | 3 | 6 | 2 | 5 |
| No change | 29 | 61 | 35 | 82 |
| Subject Certification Changes? | | | | |
| One subject only | 6 | 13 | 5 | 13 |
| More than one | 15 | 33 | 18 | 46 |
| No change | 24 | 54 | 16 | 41 |
| Type of Certification Required Changes? | | | | |
| Require Provisional | 2 | 5 | 1 | 3 |
| Require permanent | 9 | 23 | 10 | 32 |
| No change | 29 | 72 | 20 | 65 |

TABLE 5

The Effect of District Size on Staffing and Instructional Issues

| | School District Size | | | |
|---|---|---|---|---|
| | Over 10,000 Pupils | | Under 10,000 Pupils | |
| Variable | no. of responses | percent | no. of responses | percent |
| Use of Part-time Staff Change? | | | | |
| No | 10 | 21 | 9 | 21 |
| Yes, increase | 37 | 77 | 34 | 77 |
| Yes, decrease | 1 | 2 | 1 | 2 |
| Use of Volunteer Staff Change? | | | | |
| No | 14 | 30 | 9 | 22 |
| Yes, increase | 31 | 66 | 30 | 73 |
| Yes, decrease | 2 | 4 | 2 | 5 |
| Use of Student Teacher Change? | | | | |
| No | 2 | 4 | 1 | 2 |
| Yes, increase | 44 | 94 | 40 | 93 |
| Yes, decrease | 1 | 2 | 2 | 5 |
| Relocate Staff? | | | | |
| No | 6 | 13 | 20 | 48 |
| Yes | 39 | 87 | 22 | 52 |
| Cooperate with Other Agencies? | | | | |
| No | 20 | 44 | 8 | 18 |
| Yes | 26 | 56 | 36 | 82 |
| Inservice Programs for Training Staff? | | | | |
| No | 3 | 6 | 10 | 23 |
| Yes | 44 | 94 | 34 | 77 |
| Student Support Service Changes? | | | | |
| No | 11 | 24 | 13 | 30 |
| Yes | 35 | 76 | 31 | 70 |
| Materials Replacement Cycle Change? | | | | |
| No | 29 | 63 | 23 | 52 |
| Yes | 17 | 37 | 21 | 48 |

A greater percentage of the small districts require their beginning teachers to have certification in more than one subject area than the large districts. The same percentage require only one certification now since 1970, while about 50% stated that there has been no policy change in the number of subject certifications required since 1970. However, the small school districts require that their teachers have permanent certifications to a greater extent than the larger districts.

Table 5 shows staff changes made by the different size school districts. There is no difference between large and small school district policy on the use of part-time staff. Both size districts have increased the use of part-time staff.in the period from 1970 to 1978. A greater percentage of small districts have increased the use of volunteer staff than large districts, but both district sizes have increased their use of this resource substancially. The overwhelming majority of the districts of both sizes have increased their use of student teachers.

A much larger percentage of the small districts say that they have not had to relocate staff than large districts, the converse is true to large districts. A greater percentage of the small districts have been cooperating with other educational agencies for service, while the large districts are maintaining their autonomy. In general, however, there has been an increase since 1970 in the use of outside agencies by these school districts.

The overwhelming majority of the districts have sponsored in-service programs for their staff, although the percentage for

small districts providing inservice is somewhat less than larger districts. A large percentage of the small districts also did not change their student support service levels, while, again, the majority of both size districts did change the level of student support service. And, a larger percent of the small districts have changed their materials replacement cycle than the large, but the majority of all districts have not change their cycles.

Table 6 is summarized with changes in the use of instructional strategies school districts. A much greater percentage of the small districts do not use alternative education as an instructional strategy, while the majority of the large school districts do. Again, the small districts use team teaching somewhat less than the large districts, but the differences between them is small. The large majority of all districts use individualized instruction, but not as many small districts use it as large districts. A much greater percentage of large districts use computer assisted instruction than the small. However, CAI does not appear to be extensively used by either size district.

When asked if they have experienced a change in the quality of their educational program since 1970, the majority of the districts answered no. However, a larger percentage of the small districts answered that they had both an increase and decrease in the quality of education.

Table 4 to 6 compared the two size districts with school district characteristics that were discrete. Table 7 presents

TABLE 6

The Effect of District Size on Various Instructional Methodologies

| | School District Size | | | |
|---|---|---|---|---|
| | Over 10,000 Pupils | | Under 10,000 Pupils | |
| Variable | no. of responses | percent | no. of responses | percent |
| Use Alternative Education? | | | | |
| No | 10 | 23 | 15 | 52 |
| Yes | 34 | 77 | 14 | 48 |
| Use Team Teaching? | | | | |
| No | 12 | 32 | 14 | 44 |
| Yes | 25 | 68 | 18 | 56 |
| Use Individualized Instruction? | | | | |
| No | 8 | 20 | 10 | 27 |
| Yes | 32 | 80 | 27 | 73 |
| Use Computer Assisted Instruction? | | | | |
| No | 23 | 58 | 22 | 85 |
| Yes | 17 | 42 | 4 | 15 |
| Quality of Educational Program Change? | | | | |
| No | 30 | 67 | 24 | 55 |
| Yes, increase | 14 | 31 | 16 | 56 |
| Yes, decrease | 1 | 2 | 4 | 9 |

TABLE 7

The Effect of District Size on District Demographic Characteristics

| | School District Size (Mean) | | | |
|---|---|---|---|---|
| Characteristics | Over 10,000 | Under 10,000 | dF | F' |
| Area in Square Miles | 147.4 | 251.2 | 86 | 5.43* |
| 1978 Assessed Valuation (Million) | 470.9 | 114.1 | 93 | 38.37*** |
| Percent of Black | 14.17 | 20.02 | 76 | 1.36 |
| Median Income | 14,165 | 12,402 | 71 | 3.22 |
| Percent go to College | 49.4 | 41.7 | 91 | 5.27* |
| Percent Drop-Out Rate | 5.9 | 6.7 | 86 | 0.44 |

* $p > .05$
*** $p > .001$

the means on school characteristics that are continous in nature, and indicated whether the difference between the means of the large and small districts are statistically significant. As one would expect, the area of in square miles of large districts(urban areas) is significantly less than the smaller, (rural) districts. The value of the property in the districts is significantly different with the large districts having a much larger assessed valuation in 1978. The assessed valuation for the large districts was 470.9 million dollargs, while the mean assessed valuation of the small districts was 114.1 million. Surprisingly, the small districts percentage of Blacks in the population are greater than that in the large districts. However, the median income for the small districts was almost $2,000 lower than the large districts. A significantly larger percentage of high school graduates in large districts attent college than in small districts, while the drop-out tate was slightly higher for the small districts than the large districts. Except for the higher percentage of Black students in the small districts, the directions of the differences of characteristics between the large and small districts is what one would expect.

Comparisons of the Characteristics of School Districts with Increasing Versus Decreasing Student Populations

The expressed intent of this investigation was the examination of the effects of enrollment decline on instructional and supervisory programs in different size school districts, and in districts experiencing increasing and decreasing total pupil populations.

Tables 8 to 11 examines the differences of school district responses on the same variables as found in Tables 4 to 6, except that instead of being compared by size, school districts are compared as to whether they have increased or decreased in student population from 1970 to 1977.

Table 8, shows that there is virtually no difference in the percentages of responses between increasing and decreasing school district with regards to the issue of desegregation. Approximately one half of the districts in each group reported that they were not desegregated. Three percent more of the decreasing population districts reported that they have voluntary desegregation, only a small perdentage. All school districts whether with increasing or decreasing student population, were desegregated by court order.

The drop-out rate increased for a greater percentage of the decreasing districts, while the increasing districts reported that a decrease in the drop-out rate between 1970 and 1978.

With regard to staffing characteristics, a greater percentage of the decreasing population school districts reported that the median age of their staff has increased. The literature on declining enrollments suggest that younger staff members are likely to be released in staff cutbacks. These data support this contention. A greater percentage of the increasing districts report that the median age of their staff is decreasing. This supports an expected trend - that as school enrollments increase and the need for personnel rises, one can expect such districts to hire

TABLE 8

The Effect of Enrollment Changes on District Personnel Policy

| | School Districts | | | |
|---|---|---|---|---|
| | Increasing Enrollments | | Decreasing Enrollments | |
| Variable | no. of responses | percent | no. of responses | percent |
| Desegregated? | | | | |
| No | 13 | 46 | 24 | 45 |
| Yes, voluntary | 13 | 46 | 26 | 49 |
| Yes, Court-Ordered | 2 | 8 | 3 | 6 |
| Drop-out Rate Change? | | | | |
| No | 13 | 42 | 27 | 47 |
| Yes, increase | 5 | 16 | 15 | 26 |
| Yes, decrease | 13 | 42 | 16 | 28 |
| Staff Median Age Change? | | | | |
| No | 4 | 14 | 9 | 15 |
| Yes, older | 12 | 41 | 35 | 59 |
| Yes, younger | 13 | 45 | 15 | 25 |
| Teacher Retirement Policy Change? | | | | |
| No | 24 | 73 | 40 | 69 |
| Early retirement | 5 | 15 | 15 | 26 |
| Later retirement | 3 | 9 | 2 | 3 |
| Subject Area Certification Change? | | | | |
| One subject only | 5 | 17 | 6 | 11 |
| More than one | 8 | 27 | 25 | 46 |
| No change | 17 | 57 | 23 | 43 |
| Type of Certification Required Change? | | | | |
| Require temporary | 1 | 4 | 2 | 5 |
| Require permanent | 10 | 36 | 9 | 21 |
| No change | 17 | 61 | 32 | 74 |

TABLE 9

The Effect of Enrollment Changes on Staffing and Instructional Issues

| | School Districts | | | |
|---|---|---|---|---|
| | Increasing Enrollments | | Decreasing Enrollments | |
| Variable | no. of responses | percent | no. of responses | percent |
| Use of Part-time Staff Change? | | | | |
| No | 5 | 16 | 14 | 23 |
| Yes, increase | 25 | 78 | 46 | 77 |
| Yes, decrease | 2 | 6 | 0 | 0 |
| Use of Volunteer Staff Change? | | | | |
| No | 9 | 28 | 14 | 25 |
| Yes, increase | 22 | 69 | 39 | 70 |
| Yes, decrease | 1 | 3 | 3 | 5 |
| Use of Student Teacher Change? | | | | |
| No | 2 | 6 | 1 | 2 |
| Yes, increase | 29 | 91 | 55 | 95 |
| Yes, decrease | 1 | 3 | 2 | 3 |
| Relocate Staff? | | | | |
| No | 11 | 36 | 15 | 27 |
| Yes | 20 | 65 | 41 | 73 |
| Cooperate with Other Agencies? | | | | |
| No | 8 | 25 | 20 | 35 |
| Yes | 24 | 75 | 38 | 65 |
| Inservice Programs for Training Staff? | | | | |
| No | 5 | 16 | 8 | 13 |
| Yes | 26 | 84 | 52 | 87 |
| Student Support Service Changes? | | | | |
| No | 6 | 19 | 18 | 31 |
| Yes | 25 | 81 | 41 | 69 |
| Materials Replacement Cycle Change? | | | | |
| No | 11 | 37 | 41 | 68 |
| Yes | 19 | 63 | 19 | 32 |

TABLE 10

The Effect of Enrollment Changes on Various Instructional Methodologies

| | School Districts | | | |
|---|---|---|---|---|
| | Increasing Enrollments | | Decreasing Enrollments | |
| Variable | no. of responses | percent | no. of responses | percent |
| Use Alternative Education? | | | | |
| No | 12 | 43 | 13 | 29 |
| Yes | 16 | 57 | 32 | 71 |
| Use Team Teaching? | | | | |
| No | 9 | 35 | 17 | 40 |
| Yes | 17 | 65 | 26 | 60 |
| Use Individualized Instruction? | | | | |
| No | 6 | 21 | 12 | 25 |
| Yes | 22 | 79 | 37 | 75 |
| Use Computer Assisted Instruction? | | | | |
| No | 20 | 77 | 25 | 63 |
| Yes | 6 | 23 | 15 | 37 |
| Quality of Educational Program Change? | | | | |
| No | 22 | 71 | 32 | 52 |
| Yes, increase | 8 | 26 | 22 | 38 |
| Yes, decrease | 1 | 3 | 4 | 7 |

more and younger instructional staff.

The majority of districts, whether with increasing or decreasing student populations, indicated that there has been no change in the teacher retirement policy. However, of those that did indicate a change, more decreasing districts have adopted an early retirement option. This was one of the suggested management options for decline enrollment found in the literature. Surprisingly, and despite recent legislation concerning later retirement, very few districts have adopted this option.

When selecting personnel, a higher percentage of the decreasing population districts hire teachers with certifications in two or more subject areas. As the literature suggests, this allows them greater flexibility in staffing their instructional programs. A larger percentage of the increasing enrollment districts have made no change in their certification policy between 1970 and 1977 period, than decreasing districts. Also, more of them than decreasing districts require permanent certification. Very few districts will hire teachers with only temporary certification. Similarly, most school districts have made no change in their policy regarding the type of certification required.

Table 9 presents data on resources for the instructional programs of school districts. The majority of both increasing and decreasing enrollment school districts report that they have increased the use of part-time staff in their operations. However,

a larger percentage of decreasing districts have had no change in the level of part-time staff usage, while no decreasing district decreased their use. The majority of both types of districts also reported that the use of volunteer staff has increased. Twenty-five percent of the declining enrollment districts have not increased the use of volunteer staff. Over 95% of both types of districts have increased the use of student teachers.

A slightly higher percentage of the decreasing enrollment districts have had to relocate staff between 1970 and 1978. Many districts have found it necessary to close school buildings, resulting in the relocation of staff from one school to another and from one level to another. To facilitate this movement, the districts frequently provide retraining programs.

A higher percentage of decreasing districts do not cooperate with other educational agencies to provide educational services. The two areas mentioned most often for joint ventures are special education and vocational education. Area vocation schools and occupational skill centers, handicapped service centers, computer services, math-science centers, library centers, guidance and psychological services, and infant care centers, all fall within the category of "cooperative efforts" or "joint ventures."

The majority of both increasing and declining districts provide inservice training programs for their staff. One reason for inservice

activities is the forced relocation of teachers. These inservice programs are offered at all school levels and have addressed such topics as: the exceptional child, classroom management with emphasis on interpersonal relationships, bilingual education, remedial reading, management by objectives, curriculum development, individualized program materials, elementary counseling, physical education in the classroom, home-bound programs for special needs children, vocational guidance, migrant education, and home-school co-operation.

The majority of school districts, whether experiencing increases or decline in student enrollments, report they have changed the level of student support programs. However, the direction and focus of the changes are not indicated.

There is a substantial difference in the response of the two groups of districts with regards to changing the materials replacement cycle. Sixty-eight percent of the declining districts responded no, and 63% of the increasing enrollment districts responded yes. In some districts with declining enrollments, curriculum committees are formed to provide constant review of instructional materials. In many districts the replacement cycle has been lengthened as a response to reductions in funds for supplies and materials. Schools are also trying to adopt textbooks that provide more varied reading experiences, and individualized capabilities.

Table 10 presents data on the types of instructional methodologies used in declining and increasing enrollment districts from 1970 to 1977. Even though, a higher percentage of the decreasing districts used alternative education, this instructional approach existed in

a majority of both types of districts. Also, the majority of both types of districts used team teaching with the percentage being slightly less for declining schools. There is no difference between the usage of individualized instruction between the two groups; a majority of both groups use it. The majority of districts increasing and decreasing do not use computer assisted instruction, even though districts with declining enrollments use it more frequently than those with increasing enrollments.

When asked if the quality of their educational program has changed because of student population changes, the majority of both types of districts replied no. A larger percentage of the declining enrollment districts stated that the quality of their program has increased. Perhaps this indicates that these districts have been using enrollment declines as an opportunity to improve the quality of their programs. However, a slightly higher percentage of the decreasing districts also stated that the quality of their programs has decreased. Some schools related that it is more difficult with declining enrollments to offer broad instructional programs in secondary schools. Standardized curriculum offerings are on the increase, which results in fewer student choices, and less support money is available for staff retraining and purchasing of new materials.

On the positive side, many schools have used declining enrollments to strengthen present programs. Reductions of pupil/teacher ratios increase the possibility for more individualized

instruction. Curriculum revisions are being attempted to better meet the needs of educationally disadvantaged populations. New instructional concepts and techniques may be available to students through better qualified teachers, as the less qualified personnel is being gradually terminated.

Table 11 examines the continuous characteristics for increasing versus decreasing school districts to determine whether there is any difference between the mean responses of the two groups of districts. There is a slight difference in square miles between the two types of districts. The increasing districts are slightly larger, but the difference is not statistically significant. The increasing districts also have a higher assessed valuation, but the difference is not significant. There is a significant difference between the percentage of Black students districts. On the average, the declining enrollment districts have 11.6 percent more Black students than the increasing enrollment districts. A possible reason for this might be the "white flight" phenomenon. This finding is statistically significant.

The median income difference between the two groups of districts is approximately $940 with the declining districts having the lower median. There is no difference between the percent of students that go on to college between increasing and decreasing enrollment and the drop-out rate for both groups of districts is virtually the same.

TABLE 11

The Effect of Enrollment Changes on District Demographic Characteristics

| | School Districts | | | |
|---|---|---|---|---|
| VARIABLE | Increasing Enrollment | Decreasing Enrollment | dF | F |
| Square miles | 213.8 | 186.2 | 84 | 0.32 |
| Assessed Valuation (million) | 329.9 | 286.5 | 91 | 0.36 |
| Percent Black population | 9.1 | 20.7 | 75 | 5.09* |
| Median Income | 14071.5 | 13130.4 | 69 | 0.78 |
| Percent College bound | 44.8 | 46.3 | 89 | 0.18 |
| Percent drop-out rate | 6.2 | 6.5 | 84 | 0.07 |

NOTE: * $p > .05$

Table 12 displays the administrative changes that have occurred in the increasing and declining enrollment school districts since 1970. As expected, the declining enrollment districts have not increased any administrative positions. Increasing enrollment districts responded that they increased assistant principals more, but curriculum personnel has declined. All districts are increasing the number of individuals who are taking on central or district-wide duties more and more. In high demand, also, are those individuals in instructional and support services areas. A lower percentage of decreasing enrollment districts responded that they are decreasing administrators. Because of the consolidation of schools, especially elementary bu8ldings, many principal and assistant principal positions have been eliminated. Associate superintendents and curriculum coordinators have also felt the effects of declining enrollment.

TABLE 12

The Effect of Enrollment Changes on Administrative Staffing

| | School Districts | | | |
|---|---|---|---|---|
| | Increasing Enrollments | | Decreasing Enrollments | |
| Variable | no. of responses | percent | no. of responses | percent |
| Did you increase administrators? | | | | |
| No | 13 | 43 | 34 | 57 |
| Yes, asst. supt. | 6 | 20 | 13 | 22 |
| Yes, principal | 0 | 0 | 1 | 2 |
| Yes, asst. prin. | 2 | 7 | 0 | 0 |
| Yes, bus. staff | 1 | 3 | 1 | 2 |
| Yes, cur. pers. | 1 | 0 | 3 | 5 |
| Yes, dept. head | 0 | 0 | 0 | 0 |
| Yes, several adm. | 8 | 27 | 8 | 13 |
| Did you decrease administrators? | | | | |
| No | 15 | 58 | 19 | 40 |
| Yes, asst. supt. | 1 | 4 | 2 | 4 |
| Yes, principal | 1 | 4 | 4 | 8 |
| Yes, asst. prin. | 1 | 4 | 1 | 2 |
| Yes, bus. staff | 0 | 0 | 1 | 2 |
| Yes, cur. pers. | 2 | 7 | 2 | 4 |
| Yes, dept. head | 2 | 7 | 3 | 6 |
| Yes, several adm. | 4 | 15 | 16 | 33 |

The previous section discussed the differences between school districts with increasing versus decreasing student enrollment with regards to a variety of district demographic and managerial characteristics. In this section, these same comparisons will be presented except that instead of comparing increasing vs. decreasing districts, the percentage level of enrollment change from 1970 to 1977 will be used. The school districts were categorized into five groups distinguishable by their enrollment changes from 1970 to 1977. The five groups are:

a. increasing enrollments (+5% to +35% since 1970),
b. stable enrollments (+4% to -4% since 1970),
c. decreasing enrollments (-5% to -10% since 1970),
d. decreasing enrollments (-11% to -20% since 1970),
e. decreasing enrollments (-21% to -80% since 1970).

These five categories are used in Table 13 through 16 to compare the various characteristics of the school districts. Using this analysis, it is possible to disclose whether districts respond differently to managerial problems as they decrease by varying degrees in enrollments.

Table 13 shows that a much lower percentage of school districts in the 5-10% enrollment decline category are not desegregated. The majority of districts in all categories that are desegregated have done so voluntarily. Despite reports found in the literature, there does not appear to be any discernable trend in drop-out rate changes as the districts decline in enrollment. It appears that increasing enrollment districts experience a decrease in the median age of their staff, and there is a slight tendency for median staff

TABLE 13

The Effect of Varying Degrees of Enrollment Change
On District Personnel Policy

| Variable | School Districts: Enrollment Change (1970-77) Increasing (+5 to +35%) # | % | No Change (+4 to -4%) # | % | Decreasing (5-10%) # | % | Decreasing (11-20%) # | % | Decreasing (21-80%) # | % |
|---|---|---|---|---|---|---|---|---|---|---|
| Desegregated? | | | | | | | | | | |
| No | 12 | 48 | 5 | 46 | 9 | 56 | 2 | 25 | 8 | 28 |
| Voluntary | 11 | 44 | 6 | 54 | 6 | 38 | 6 | 75 | 11 | 52 |
| Court-ordered | 2 | 8 | 0 | 0 | 1 | 6 | 0 | 0 | 2 | 10 |
| Drop-Out Rate Change? | | | | | | | | | | |
| No | 10 | 37 | 7 | 50 | 7 | 42 | 6 | 60 | 11 | 50 |
| Yes, increase | 4 | 15 | 5 | 36 | 5 | 29 | 0 | 0 | 6 | 27 |
| Yes, decrease | 13 | 48 | 2 | 14 | 5 | 29 | 4 | 40 | 5 | 23 |
| Staff Median Age Change? | | | | | | | | | | |
| No | 4 | 15 | 1 | 8 | 3 | 16 | 1 | 10 | 4 | 19 |
| Yes, increase | 9 | 35 | 9 | 69 | 9 | 47 | 6 | 60 | 13 | 62 |
| Yes, decrease | 13 | 50 | 3 | 23 | 7 | 37 | 3 | 30 | 4 | 19 |
| Teacher Retirement Policy Change? | | | | | | | | | | |
| Early retirement | 5 | 18 | 1 | 7 | 3 | 19 | 3 | 30 | 8 | 35 |
| Later retirement | 2 | 8 | 1 | 7 | 2 | 13 | 0 | 0 | 0 | 0 |
| No change | 21 | 74 | 12 | 86 | 10 | 62 | 7 | 70 | 15 | 65 |
| Subject Area Certification Change? | | | | | | | | | | |
| One subject only | 4 | 15 | 3 | 21 | 1 | 6 | 2 | 22 | 1 | 5 |
| More than one | 6 | 23 | 5 | 36 | 7 | 44 | 5 | 56 | 10 | 50 |
| No change | 16 | 62 | 6 | 43 | 8 | 50 | 2 | 22 | 9 | 45 |
| Type of Certification Change? | | | | | | | | | | |
| Require provisional | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12 |
| Require permanent | 10 | 39 | 2 | 22 | 4 | 29 | 1 | 20 | 2 | 12 |
| No change | 15 | 57 | 7 | 78 | 10 | 71 | 4 | 80 | 13 | 76 |

NOTE: #- number of responses; %- percent

age to increase in decreasing enrollment districts.

There is a definite trend in retirement policy by declining enrollment pattern. As declining enrollments occur districts insitute early retirement policies; the more stable the enrollments are, the greater is the tendency for districts to opt for no changes in their retirement policy. With regard to subject area certification, again, there is a clear trend that as school districts decline in enrollments, they required their teachers to be certified in more than one subject area. Declining districts also require fewer teachers with permanent certification.

Table 14 shows that while the majority of districts have increased the use of part-time staff, there is no discernable pattern with regard to enrollment changes. The majority of all districts again have increased the use of volunteer staff, but declining districts use increasingly more volunteer staff as the rate of decline rises up to 11-20%. Then the pattern begins to fall out somewhat. This, perhaps is due to the fact that those districts (21-80% decline) have reached the limit on the number of staff that can be dismissed without a crises, and they reduce the use of volunteer staff to utilize more fully the remaining teachers.

The majority of all districts use student teachers, but districts with increasing levels of enrollment decline reduce the level of student teacher usage. There is a wide variation in the tendency of the districts in relocating staff. While all districts

TABLE 14

The Effect of Varying Degrees of Enrollment Change
On Staffing and Instruction Issues

| | School Districts | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Enrollment Change (1970-77) | | | | | | | | | |
| | Increasing (+5% to 35%) | | No Change (+4 to -4%) | | Decreasing (5-10%) | | Decreasing (11-20%) | | Decreasing (21-80%) | |
| Variable | # | % | # | % | # | % | # | % | # | % |
| Use of Part-Time Staff Change? | | | | | | | | | | |
| No | 4 | 14 | 4 | 29 | 4 | 21 | 2 | 20 | 5 | 23 |
| Yes, increase | 23 | 82 | 10 | 71 | 15 | 79 | 8 | 80 | 17 | 77 |
| Yes, decrease | 1 | 4 | - | - | - | - | - | - | - | - |
| Use of Volunteer Staff Change? | | | | | | | | | | |
| No | 7 | 25 | 6 | 43 | 5 | 28 | 2 | 20 | 3 | 16 |
| Yes, increase | 20 | 71 | 8 | 57 | 12 | 67 | 8 | 80 | 14 | 74 |
| Yes, decrease | 1 | 4 | - | - | 1 | 6 | - | - | 2 | 10 |
| Use of Student Teacher Change? | | | | | | | | | | |
| No | 2 | 7 | - | - | 1 | 6 | - | - | - | - |
| Yes, increase | 25 | 89 | 14 | 100 | 17 | 94 | 9 | 90 | 20 | 95 |
| Yes, decrease | 1 | 4 | - | - | - | - | 1 | 10 | 1 | 5 |
| Relocate Staff? | | | | | | | | | | |
| No | 11 | 41 | 2 | 15 | 6 | 32 | 1 | 13 | 6 | 27 |
| Yes | 16 | 59 | 11 | 85 | 13 | 68 | 7 | 87 | 15 | 71 |
| Cooperate with Other Agencies? | | | | | | | | | | |
| No | 8 | 29 | 4 | 31 | 6 | 33 | 4 | 40 | 6 | 27 |
| Yes | 20 | 71 | 9 | 69 | 12 | 67 | 6 | 60 | 16 | 73 |
| Inservice Programs for Training Staff? | | | | | | | | | | |
| No | 5 | 19 | 1 | 7 | 2 | 11 | - | - | 5 | 23 |
| Yes | 22 | 81 | 13 | 93 | 17 | 89 | 10 | 100 | 17 | 77 |
| Student Support Service Changes? | | | | | | | | | | |
| No | 6 | 22 | 5 | 36 | 2 | 11 | 3 | 30 | 8 | 38 |
| Yes | 21 | 78 | 9 | 64 | 17 | 89 | 7 | 70 | 13 | 62 |
| Materials Replacement Cycle Change? | | | | | | | | | | |
| No | 10 | 39 | 7 | 50 | 15 | 79 | 7 | 70 | 14 | 64 |
| Yes | 16 | 61 | 7 | 50 | 4 | 21 | 3 | 30 | 8 | 36 |

have relocated staff, the rate of decrease does not perfectly parallel the rise in declining enrollment. The highest rate of relocation occurs in districts with stable enrollments and the 11-20% decline category, followed respectively by the 21-80% and 5-10% categories.

There is no discernable pattern with regards as to whether school districts cooperated with other agencies for educational services, although the majority of all districts do so. The majority of all districts also provide inservice programs for the retraining of their staff, with that percentage being greates for 11-20% declining and no change enrollment districts. And, districts with the highest levels of declines also are the ones most likely not to provide in-service training programs for their staff. This, may be due to a lack of funds. When asked whether they had changed the level of their student support services, the school systems response patterns varied. While the majority of all districts stated that they did change the levels of support, the pattern of change shifted at the 5-10% decline category. Districts in that category were less likely to change student support services than districts in all other categories. This, perhaps, is due to the fact that as districts declined slightly, the first area to be cut is student extra or co-curriculum activities. Because these are reduced at the outset, they may be unable to cut further when higher levels of enrollment decline are reached. Another possible explanation is that as districts decline, there is natural attrition in the absolute level of student support services required.

Finally, Table 13 shows that higher percentages of declining districts have not changed their materials replacement cycle than increasing or stable districts, and that as the districts decline in enrollments increasing percentages of the districts change the cycle.

Table 14 indicates the effects of enrollments changes on the propensity of school districts to use various instructional strategies. In general, as districts decline in enrollments, they tend towards using alternative education as an instructional strategy. The districts with the severest declines show the highest percentage of using alternative education. There is no discernable pattern among schools regarding the differential use of team teaching, although the majority of all categories of district use it. Slightly higher percentages of declining districts do not use individualized instruction. This tendency is greatest for those districts with the highest percentage of enrollment decline. Again, however, the majority of all groups of districts use individualized instruction as an alternative. The majority of all school districts, except those with enrollment declines between 11-20%, do not use computer assisted instruction. However, the tendency not to use CAI is slightly higher for declining enrollment districts than for stable or increasing enrollment school systems.

When asked whether the quality of their educational program has changed with enrollment changes, higher percentages of the increasing, stable, and slightly decreasing districts gave negative responses.

TABLE 14

The Effect of Varying Degrees of Enrollment Change
On Staffing and Instructional Issues

| | School Districts | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Enrollment Change (1970-77) | | | | | | | | | |
| | Increasing (+5 to +35%) | | No Change (+4 to -4%) | | Decreasing (5-10%) | | Decreasing (11-20%) | | Decreasing (21-80%) | |
| | # | % | # | % | # | % | # | % | # | % |
| **Use of Part-Time Staff Change?** | | | | | | | | | | |
| No | 4 | 14 | 4 | 29 | 4 | 21 | 2 | 20 | 5 | 23 |
| Yes, increase | 23 | 82 | 10 | 71 | 15 | 79 | 8 | 80 | 17 | 77 |
| Yes, decrease | 1 | 4 | - | - | - | - | - | - | - | - |
| **Use of Volunteer Staff Change?** | | | | | | | | | | |
| No | 7 | 25 | 6 | 43 | 5 | 28 | 2 | 20 | 3 | 16 |
| Yes, increase | 20 | 71 | 8 | 57 | 12 | 67 | 8 | 80 | 14 | 74 |
| Yes, decrease | 1 | 4 | - | - | 1 | 6 | - | - | 2 | 10 |
| **Use of Student Teacher Change?** | | | | | | | | | | |
| No | 2 | 7 | - | - | 1 | 6 | - | - | - | - |
| Yes, increase | 25 | 89 | 14 | 100 | 17 | 94 | 9 | 90 | 20 | 95 |
| Yes, decrease | 1 | 4 | - | - | - | - | 1 | 10 | 1 | 5 |
| **Relocate Staff?** | | | | | | | | | | |
| No | 11 | 41 | 2 | 15 | 6 | 32 | 1 | 13 | 6 | 27 |
| Yes | 16 | 59 | 11 | 85 | 13 | 68 | 7 | 87 | 15 | 71 |
| **Cooperate with Other Agencies?** | | | | | | | | | | |
| No | 8 | 29 | 4 | 31 | 6 | 33 | 4 | 40 | 6 | 27 |
| Yes | 20 | 71 | 9 | 69 | 12 | 67 | 6 | 60 | 16 | 73 |
| **Inservice Programs for Training Staff?** | | | | | | | | | | |
| No | 5 | 19 | 1 | 7 | 2 | 11 | - | - | 5 | 23 |
| Yes | 22 | 81 | 13 | 93 | 17 | 89 | 10 | 100 | 17 | 77 |
| **Student Support Service Changes?** | | | | | | | | | | |
| No | 6 | 22 | 5 | 36 | 2 | 11 | 3 | 30 | 8 | 38 |
| Yes | 21 | 78 | 9 | 64 | 17 | 89 | 7 | 70 | 13 | 62 |
| **Materials Replacement Cycle Change?** | | | | | | | | | | |
| No | 10 | 39 | 7 | 50 | 15 | 79 | 7 | 70 | 14 | 64 |
| Yes | 16 | 61 | 7 | 50 | 4 | 21 | 3 | 30 | 8 | 36 |

NOTE: # - number of responses; % - percent

Those districts with the highest rates of enrollment declines were almost equally divided in saying that the quality of their educational program had both risen and dropped.

Table 15 presents the mean values for each of the five enrollment categories of school districts with respect to several different characteristics. There is no discernable trend among any of the different groups of districts for any of the district characteristics. This fact is further substantiated by the lack of statistical significance on any of the districts responses.

TABLE 15

The Effect of Varying Degrees of Enrollment Change
On Various Instructional Methodologies

| | School Districts | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Enrollment Change (1970-77) | | | | | | | | | |
| le | Increasing | | No Change | | Decreasing 5-10% | | Decreasing 11-20% | | Decreasing 21-80% | |
| | # | % | # | % | # | % | # | % | # | % |
| ternative Education? | | | | | | | | | | |
| | 10 | 42 | 4 | 31 | 4 | 31 | 3 | 37 | 3 | 19 |
| | 14 | 58 | 9 | 69 | 9 | 69 | 5 | 63 | 13 | 81 |
| am Teaching? | | | | | | | | | | |
| | 9 | 39 | 2 | 20 | 7 | 44 | 3 | 60 | 6 | 40 |
| | 14 | 61 | 8 | 80 | 9 | 56 | 2 | 40 | 9 | 60 |
| dividualized Instruction? | | | | | | | | | | |
| | 5 | 20 | 1 | 9 | 5 | 28 | 2 | 25 | 5 | 31 |
| | 20 | 80 | 10 | 91 | 13 | 72 | 6 | 75 | 11 | 69 |
| mputer Assisted Instruction? | | | | | | | | | | |
| | 18 | 78 | 7 | 78 | 8 | 62 | 2 | 29 | 10 | 71 |
| | 5 | 22 | 2 | 22 | 5 | 39 | 5 | 71 | 4 | 29 |
| y of Educational Program Change? | | | | | | | | | | |
| | 18 | 67 | 10 | 77 | 13 | 72 | 4 | 40 | 10 | 46 |
| ncrease | 8 | 30 | 3 | 23 | 4 | 22 | 6 | 60 | 9 | 41 |
| ecrease | 1 | 3 | - | - | 1 | 6 | - | - | 3 | 13 |

NOTE: #-number of responses; %-percent

The Effects of Declining Enrollment on Specific Curriculum Areas

The effects of declining enrollments on five instructional program areas are examined below. These instructional areas are: (1) student enrollment changes in each subject areas, (2) staffing changes in each subject area, (3) courses offered but not necessarily taught in each area, (4) courses actually taught in each area, and (5) facility space allocated to each subject area. The last part of the survey questionaire (See Appendix A) consisted of 60 questions which were used to assess the impact of enrollment changes in different subject areas. School district responses were reported on a Likert-type scale to indicate the degree to which enrollment changes affect a particular subject area. Respondents to the questionaire had five options to choose from. The options, indicating both the direction and magnitude of the effect of enrollment changes on the subject area were:

"1" - indicating a significant (greater than 25%) increase,
"2" - indicating a slight (5% to 25%) increase,
"3" - indicating no change (+5% to -5%),
"4" - indicating a slight decrease (-5% to -25%),
"5" - indicating a significant decrease (greater than -25%).

Thus, for each subject area, there were five sets of scales, with each scale designating the impact of declining enrollments on each of five effects (enrollments, staff, course offerings, courses taught, and facility space) on each of fifteen different subject areas. In order to faciliatate analysis, the data gathered were aggregated into a three point scale by recoding all responses indicating an increase (1 and 2) to "1", all responses indicating no

TABLE 16

The Effect of Varying Degrees of Enrollment Change
On District Demographic Characteristics

| | School Districts | | | | | | |
|---|---|---|---|---|---|---|---|
| | Enrollment Change (1970-77) | | | | | | |
| Variable | Increasing (+5 to +35%) Mean | No Change (+4 to -4%) Mean | Decreasing 5-10% Mean | Decreasing 11-20% Mean | Decreasing 21-80% Mean | dF | F |
| rea | 206 | 191 | 200 | 199 | 175 | 85 | 0.06 |
| ssed. Val. | 340m | 255m | 393m | 179m | 242m | 92 | 1.02 |
| Black | 10.7 | 9.9 | 22.7 | 18.9 | 28.9 | 66 | 1.89 |
| ed. Income | 14241 | 13376 | 12177 | 14170 | 12993 | 70 | 0.60 |
| Col.Bound | 44 | 49 | 43 | 41 | 48 | 90 | 0.63 |
| Dropout rt | 6.1 | 8.0 | 7.4 | 6.7 | 4.3 | 85 | 1.02 |

change (3) to "2", and all responses indicating decreases (4 and 5) to "3". Thus, a response of "1" indicates an increase,"2" indicates no change, and "3" indicates a decrease. These data were then treated to several different kinds of analysis.

The first analysis was done with the intent of disclosing whether school districts with increasing and decreasing enrollments experienced different effects of enrollment changes in three main curricular areas: the academic core, the vocational core, and the arts area. These three curricular areas were created by aggregating fifteen separate instructional clusters as follows:

(1) The academic subjects were aggregated into a group called "Acad" by summing the responses of the four subject areas of language arts, social studies, mathematics, and science. Thus, the new variable "Acad" has a minimum value, of 4 if all responses for the four subject areas was "1", a score of 8 of no change was indicated, and a maximum value of 12 if all responses showed a decline (3).

(2) The vocational core, designated "Voc", was created by summing the responses to the five vocational subjects (industrial arts, commercial education, distributive education, home economics education, and agriculture education). Thus, the minimum value of "Voc" using the recoded responses discussed above is 5, the maximum value is 15 and the mean value is 10.

(3) The variable "Art", was created by aggregating two subject area responses, fine arts and foreign languages. The minimum value of "Art" is 2, the maximum value is 6, and the mean value is 4.

Table 17 displays the means for the increasing and decreasing enrollment school districts on each of the five effects of enrollment changes for each of the three core instructioanl areas. The F statistic indicates whether the difference between the mean scores is statistically significant for the first decline effect on the

TABLE 17

The Effects of Enrollment Change on Curricular Core Areas

| Area | School Districts: Increasing Enrollment | Decreasing Enrollment | dF | F |
|---|---|---|---|---|
| Academic Core ("Acad") minimum value: 4, Maximum value: 12, mean value: 8.00 | | | | |
| Acad 1 - Enrollment Changes | 6.82 | 8.05 | 93 | 15.7*** |
| Acad 2 - Staff Changes | 7.15 | 8.07 | 93 | 7.9** |
| Acad 3 - Course Offerings | 7.03 | 7.39 | 93 | 0.7 |
| Acad 4 - Courses Taught | 6.79 | 7.54 | 93 | 3.5* |
| Acad 5 - Space Allocated | 6.64 | 7.72 | 93 | 9.2** |
| Vocational Core ("Voc") minimum value: 5, maximum value: 15, mean value: 10.00 | | | | |
| Voc 1 - Enrollment Changes | 8.79 | 9.89 | 72 | 6.5** |
| Voc 2 - Staff Changes | 9.11 | 9.82 | 72 | 4.8* |
| Voc 3 - Course Offerings | 9.18 | 9.56 | 72 | 0.9 |
| Voc 4 - Courses Taught | 9.11 | 9.69 | 72 | 2.1 |
| Voc 5 - Space Allocated | 8.54 | 9.62 | 72 | 6.4** |
| Arts Core ("Art") minimum value: 2, maximum value: 6, mean value: 4.00 | | | | |
| Art 1 - Enrollment Changes | 3.58 | 4.40 | 93 | 14.9*** |
| Art 2 - Staff Changes | 3.64 | 4.34 | 93 | 10.6*** |
| Art 3 - Course Offerings | 3.67 | 4.16 | 93 | 5.2* |
| Art 4 - Courses Taught | 3.73 | 4.21 | 93 | 4.8* |
| Art 5 - Space Allocated | 3.45 | 3.98 | 93 | 6.8** |

NOTE: * $p>.05$
** $p>.01$
*** $p>.001$

academic core $Acad_1$ Student enrollments in academic subjects, for those districts with increases in student enrollment from 1970 to 1977, had a mean value of 6.82. The declining enrollment districts for the same period had a mean value of 8.05. Since the expected mean for district with stable enrollments is 8.00, the increasing enrollment districts experienced a rise in student enrollments in the academic subject while declining school districts have had a decline. This finding is statistically significant at the .001 probability level, Acad. 2, (staff changes in the academic subjects) showed basically the same pattern as Acad 1. The difference is significant at the .01 level. The other three academic core effects, (course offerings, courses taught, and space allocated) have increased in all school districts from 1970 to 1977, with the increasing enrollments ones increasing slightly more than the declining enrollment districts. Courses taught and space allocation effects were statistically significant at the .05 and .01 levels, respectively. Although there has been some rise in number of courses offered since 1970, the difference was not significant.

For the vocational core, enrollment changes of both increasing and decreasing school districts increased. However, the difference between the two was significant ($p > .001$), favoring the increasing enrollment districts. This same general pattern held true for all other vocational core effects, staff changes and space allocation effects were statistical differences, at the $p > .05$ and $p > .01$ levels

respectively, favoring the increasing enrollment districts. While courses offered and courses taught increased for both categories of school districts, differences in the amount of increase between declining and increasing districts were not significant.

As seen in Table 17, the declining enrollment school districts have higher mean values for all the effects on the arts core (e.g. fine arts and foreign language courses) than the increasing enrollment school districts. All of these differences are significant at the $p > .05$ level or above. Except for the facility space allocated to the arts core, all the arts core effects show a slight decline from 1970 to 1977 (because the mean value for each of the other effects is above the expected mean value of 4.00, which indicates "no change").

The most salient feature of the data in Table 17 is the fact that the means between the increasing and declining school districts, regardless of the effect and core curricular areas, showed a difference in the same direction, and that the majority of these differences were statistically significant. On the basis of this information, it is safe to say that school districts with increasing enrollments do behave differently with regard to curricular areas than school districts with declining enrollments. While school districts either increase in all effects, declining school districts either increase significantly less or decrease with respect to student enrollments, staffing, course offerings, courses taught, or facilty allocation in the three core curricular areas (academic,

vocational, arts).

The next set of analyses are intended to determine if the effects of declining enrollments on curricular areas are consistent in pattern and direction with the overall enrollment patterns of school districts. To make this determination, a greater level of accuracy was required in the data. Thus, the original five-point Likert scale found on the questionnaire in Appendix A was employed instead of the three-point aggregated scale used for the analysis reported in Table 17. The three major curricular areas (Acad, Voc, and Art) and the five effects areas (enrollment, staff changes, courses offered, courses taught, space allocation) remain the same. However, instead of examining the data according to increasing and decreasing districts, the school districts were categorized again into five groups of population changes previously employed - that is increasing (+5 to 35%), stable (+4-4%), decreasing (5-10%), decreasing by (11-20%), and decreasing by (21-80%). Table 18 reports the results of these more extensive analyses.

In the academic core area, a mean score below 12.00 indicates that the effect of school district enrollment changes caused had a positive (increase) effect on the academic core courses in the period from 1970 to 1977. A mean score over 12.00 indicates a decrease in the effects. Student enrollments in academic courses, ($Acad_1$) in proportion to the total number of students in the school, shows a steady increase in the mean value as the schools

decrease in total enrollments. This trend suggests that as a school district's total population decreases, so does the enrollment in the academic core. The highly decreasing districts (-21-80%), showed a net of decrease in student enrollments in these courses, while the increasing, stable, and slight decreasing districts showed net increases. The difference among the means is statistically significant at $p>.001$ level.

The staff assigned to teach in the academic cores subjects ($Acad_2$), decreases as school districts decline in enrollments. The difference among these means in statistically significant ($p>.05$ level). Academic core course offering also decline as total district enrollments decrease, but the difference by district category is not significant. However, the decline in actual academic courses taught shows a statistically significant difference ($p>.05$), for high (21-80%) declining districts. Finally facility allocation for academic core subject ($Acad_5$), shows increases in the mean across each level of school district enrollment decline, and the difference among the means is statistically significant ($p>.05$ level).

For all the vocational effects, a mean above 15.00 indicates a decrease in the effect, and a mean below 15.00 indicates an increase in the effect. A major difference exists between the increasing, stable, moderate and high decline districts in student enrollment in the vocational core ($Voc_1$). This difference

($p>.05$ level) indicates that vocational core enrollments are increasing. For slightly declining districts $Voc_1$ has remained stable. $Voc_2$ shows a large difference between the increasing and stable districts with no difference among the decreasing districts. $Voc_3$ is similar to $Voc_2$, except that in districts with an 11%-20% decline in enrollments vocational education courses offerings are stabilized given that their actual mean (15.0) is the same as the expected mean. These same districts also teach fewer vocational education courses ($Voc_4$), than all the other districts. However, the difference is not significant. $Voc_5$ shows a large difference between themeans of the increasing, stable and moderately to high decreasing districts. This indicates that as districts grow, they allocate more space to vocational subjects.

The data in Table 18 shows that differences for all five effects in the Arts core are significant at the $p>.05$ level or above. Student enrollments and courses offered in the Arts core increase as school district enrollment rises, arts core staff declines as the districts total enrollments decrease. Courses actually taught likewise corresponds with declining total district enrollments. The amount of space allocated to the arts core declines significantly as school enrollments first begin to decrease, and then begin to stabilize somewhat as the rate of enrollment decline grows.

Tables 19-23 present data on each of the five effects of district enrollment changes on all fifteen subject areas listed on

TABLE 18

The Effects of Varying Degrees of Enrollment Change
On Curricular Core Areas

School Districts

| Area: | Enrollment Change (1970-77) Increasing (+5 to 35%) Mean | No Change (+4-4%) Mean | Decreasing 4-10% Mean | Decreasing 11-20% Mean | Decreasing Mean | dF | F' |
|---|---|---|---|---|---|---|---|
| ic Core-(Acad)- Minimum value: 4, Maximum value: 20, Mean value: 12:00 | | | | | | | |
| -Enrollment Changes | 10.4 | 11.0 | 11.8 | 12.6 | 12.4 | 94 | 4.88*** |
| -Staff Changes | 10.9 | 11.4 | 12.0 | 12.5 | 12.1 | 94 | 2.36* |
| -Courses Offered | 10.9 | 10.5 | 11.1 | 11.7 | 11.7 | 94 | 0.97 |
| -Courses Taught | 10.6 | 10.5 | 11.2 | 11.7 | 12.1 | 94 | 2.36* |
| -Space Allocated | 10.1 | 10.7 | 11.5 | 11.7 | 12.1 | 94 | 3.26* |
| onal Core-(Voc)- Minimum value: 5, Maximum value: 25, Mean value: 15:00 | | | | | | | |
| -Enrollment Changes | 13.1 | 14.1 | 15.0 | 15.1 | 14.9 | 73 | 3.26* |
| -Staff Changes | 13.7 | 14.5 | 14.7 | 14.9 | 14.9 | 73 | 1.96 |
| -Courses Offered | 13.8 | 14.5 | 14.3 | 15.0 | 14.5 | 73 | 0.78 |
| -Courses Taught | 13.8 | 14.3 | 14.3 | 15.4 | 14.6 | 73 | 1.13 |
| -Space Allocated | 12.6 | 14.5 | 14.0 | 14.4 | 15.1 | 73 | 3.55** |
| ore-(Art)- Minimum value: 2, Maximum value: 10, Mean value: 6:00 | | | | | | | |
| -Enrollment Changes | 5.3 | 5.9 | 6.6 | 6.9 | 6.8 | 94 | 5.19*** |
| -Staff Changes | 5.4 | 5.9 | 6.2 | 6.8 | 6.6 | 94 | 3.70** |
| -Courses Offered | 5.5 | 5.6 | 6.1 | 6.3 | 6.6 | 94 | 2.69* |
| -Courses Taught | 5.5 | 5.7 | 6.0 | 6.6 | 6.6 | 94 | 2.91* |
| -Space Allocated | 5.1 | 5.7 | 6.2 | 6.0 | 5.9 | 94 | 2.43* |

NOTE: * p>.05
** p>.01
*** p>.001

the questionnaire. In all these analyses, the five point Likert type scale was used to compute the mean response of all responses in each of the five categories school districts. Since each subject had its own response, the low value of the mean is 1.00, the highest possible value is 5.00, and the expected mean is 3.00. Thus, for each subject, a mean lower than 3.00 indicates an increase of the effect for that subject area, while a mean of higher than 3.00 indicates a decrease in the effect.

Table 19 presents the effect of enrollment decline on changes in the percentage of the total student population that has enrolled to take each of the fifteen subjects listed. Rather than commenting on each subject separately, only the highlights of the table are discussed. The data in this table, as well as Table 20-23, may be analyzed in two different ways. First, a horizonal axis analyses wherein the changes by school districts enrollment decline category are examined to see what effect enrollment changes have on a particular subject area. For example, language arts, shows that there is an increase in the mean from the low value of 2.52 for school districts with increasing enrollments (which indicates that these districts had an increase in the percentage of students taking these courses), to a low value of 3.13 for the high decline in the number of students takin these courses. Again, the F statistic reveals whether the difference among the means for that subject is statistically significant.

TABLE 19

The Effects of Varying Degrees of Enrollment Change
on the Student Enrollments in Particular Subject Areas

| | School Districts Enrollment Patterns | | | | | | |
|---|---|---|---|---|---|---|---|
| Enrollment Changes in: | Increasing (+5-+35) Mean | No Change (+4-4%) Mean | Decreasing (4-10%) Mean | Decreasing (11-20%) Mean | Decreasing (21-80%) Mean | dF | F' |
| Language Arts | 2.52 | 2.71 | 2.84 | 2.80 | 3.13 | 94 | 2.60* |
| Social Studies | 2.59 | 3.00 | 2.95 | 3.10 | 3.00 | 94 | 3.88** |
| Mathematics | 2.69 | 2.71 | 2.94 | 3.20 | 3.13 | 94 | 2.31 |
| Science | 2.59 | 2.64 | 3.05 | 3.50 | 3.13 | 94 | 4.80*** |
| Foreign Language | 2.93 | 3.14 | 3.47 | 3.90 | 3.89 | 94 | 4.12** |
| Fine Arts | 2.38 | 2.79 | 3.11 | 3.00 | 2.96 | 94 | 2.95* |
| Industrial Arts | 2.43 | 2.93 | 2.95 | 2.80 | 2.91 | 93 | 2.16 |
| Commercial Ed. | 2.56 | 3.00 | 3.00 | 2.80 | 3.00 | 91 | 1.85 |
| Distributive Ed. | 2.54 | 2.64 | 2.83 | 2.78 | 2.81 | 89 | 0.66 |
| Home Ec. Ed. | 2.69 | 2.57 | 3.11 | 3.10 | 3.00 | 94 | 2.02 |
| Health and P.E. | 2.59 | 3.07 | 2.95 | 2.80 | 2.91 | 94 | 1.51 |
| Agriculture Ed. | 3.12 | 3.00 | 3.06 | 3.00 | 3.41 | 76 | 0.97 |
| Special Ed. | 1.86 | 2.14 | 1.79 | 1.90 | 1.83 | 94 | 0.32 |
| Compensatory Ed. | 2.31 | 2.33 | 2.26 | 2.11 | 2.30 | 85 | 0.11 |
| Driver's Ed. | 2.66 | 2.79 | 2.95 | 2.70 | 3.17 | 94 | 2.27 |

NOTE: * $p > .05$
** $p > .01$
*** $p > .001$

The second procedure that may be used to interpret the data in Tables 19-23 is a vertical axis analysis wherein the means of all the subject areas at one level of district population change are compated. For example as one looks down the column of means in Table 19 for high decline school districts (21-80%) one sees that the lowest mean is 1.83 for special education and the highest mean is 3.89 for the foreign languages. This may be interpreted to mean that of the fifteen subjects listed in high decline school districts, special education has received the largest increase in the number of students participating in that course, while the foreign languages have had the largest decrease in the number of students. Using this type of analysis, it is possible to identify which subjects are receiving increased or decreased emphasis as the school districts decline in enrollment.

The levels of significance statistic in Table 19 show that the largest mean differences for the five school districts enrollment categories occurs on academic subjects. Foreign languages show a decrease in the number of students taking that group of courses for all enrollment groups of districts except for the districts with increasing enrollments. Special education, on the other hand, shows the largest increases in student enrollments, followed by compensatory education.

Of the vocational courses, agriculture education shows a decline in all districts, while both industrial arts and distributive education show increases in all categories of districts.

In fact, with the exception of agricultural education, the vocational courses show student increases over the academic courses. And, enrollments increase in fine arts as district enrollments decline, and driver's education is increasing for all districts, except the high decline ones.

Table 20 shows staffing changes for all subject areas and for each group of school districts. This table is similar in many respects to Table 19. The most noticable difference between the data in Table 20 and Table 19 is that the mean scores in Table 20 are not quite as high. This may indicate student-teacher ratios are changing for the subject areas and that staffing changes are not made as readily as student changes. Generally, across school districts, social studies, science, foreign language and industrial arts courses are losing staff at a rate that is statistically significant. Within high decline districts, staff reductions are greatest in foreign languages and agricultural education, while staff additions are in special education.

Table 21 presents data on course offerings for all the subject areas by category of district enrollment. None of the differences among the means is statistically significant. This suggests that regardless of the extent of enrollment decline, the course offerings in the fifteen subject areas listed remain the same. This may be interpreted to mean that while the number of courses listed on school district books remain the same,

TABLE 20

The Effects of Varying Degrees of Enrollment Change
on the Staffing of Particular Subject Areas

| | School Districts | | | | | | |
|---|---|---|---|---|---|---|---|
| Staffing Changes in: | Increasing (+5–+35) Mean | No Change (+4–4%) Mean | Decreasing 4–10% Mean | Decreasing 11–20% Mean | Decreasing 21–80% Mean | dF | F' |
| Language Arts | 2.69 | 2.85 | 2.89 | 2.90 | 3.09 | 94 | 1.20 |
| Social Studies | 2.69 | 2.93 | 3.05 | 3.20 | 3.00 | 94 | 3.56** |
| Mathematics | 2.76 | 2.86 | 2.95 | 3.10 | 3.00 | 94 | 0.99 |
| Science | 2.79 | 2.71 | 3.11 | 3.30 | 3.04 | 94 | 2.66* |
| Foreign Language | 2.93 | 3.14 | 3.32 | 3.60 | 3.70 | 94 | 2.96* |
| Fine Arts | 2.48 | 2.71 | 2.89 | 3.20 | 2.91 | 94 | 2.21 |
| Industrial Arts | 2.57 | 2.93 | 2.84 | 3.20 | 2.91 | 93 | 2.64* |
| Commercial Ed. | 2.74 | 3.15 | 3.11 | 2.90 | 2.96 | 91 | 1.68 |
| Distributive Ed. | 2.68 | 2.79 | 2.89 | 3.00 | 2.90 | 89 | 0.68 |
| Home Ec. Ed. | 2.72 | 2.71 | 3.11 | 3.20 | 2.96 | 94 | 2.14 |
| Health and P.E. | 2.66 | 3.00 | 2.95 | 3.10 | 3.04 | 94 | 1.52 |
| Agriculture Ed. | 3.12 | 2.91 | 2.94 | 3.00 | 3.41 | 76 | 1.60 |
| Special Ed. | 1.86 | 2.00 | 1.68 | 1.90 | 1.91 | 94 | 0.26 |
| Compensatory Ed. | 2.42. | 2.33 | 2.31 | 2.56 | 2.30 | 85 | 0.21 |
| Driver's Ed. | 2.72 | 2.71 | 2.84 | 3.00 | 3.04 | 94 | 1.19 |

NOTE: * p>.05
** p>.01

TABLE 21

The Effects of Varying Degrees of Enrollment Change on the Course Offerings of Particular Subject Areas

| | School Districts | | | | | | |
|---|---|---|---|---|---|---|---|
| e Offering ges in: | Increasing +5-+35% Mean | No Change +4-4% Mean | Decreasing 4-10% Mean | Decreasing 11-20% Mean | Decreasing 21-80% Mean | dF | F' |
| uage Arts | 2.66 | 2.71 | 2.58 | 3.00 | 2.83 | 94 | 0.47 |
| l Studies | 2.66 | 2.64 | 2.79 | 2.80 | 2.96 | 94 | 0.77 |
| matics | 2.76 | 2.43 | 2.79 | 3.00 | 2.97 | 94 | 2.29 |
| ce | 2.79 | 2.71 | 2.89 | 2.90 | 2.96 | 94 | 0.43 |
| gn Language | 3.00 | 2.92 | 3.21 | 3.30 | 3.65 | 94 | 2.32 |
| Arts | 2.52 | 2.71 | 2.89 | 3.00 | 2.91 | 94 | 1.64 |
| trial Arts | 2.64 | 2.79 | 2.79 | 2.80 | 2.74 | 93 | 0.21 |
| rcial Ed. | 2.67 | 2.92 | 2.84 | 2.90 | 2.78 | 91 | 0.47 |
| ibutive Ed. | 2.71 | 2.93 | 2.94 | 2.67 | 3.00 | 89 | 1.18 |
| Ec. Ed. | 2.76 | 2.79 | 2.84 | 3.10 | 2.87 | 94 | 0.70 |
| h and P.E. | 2.72 | 2.93 | 2.89 | 2.80 | 2.96 | 94 | 0.78 |
| ulture Ed. | 3.12 | 2.82 | 2.81 | 3.00 | 3.18 | 76 | 1.10 |
| al Ed. | 2.07 | 2.29 | 1.89 | 2.20 | 1.91 | 93 | 0.47 |
| nsatory Ed. | 2.36 | 2.25 | 2.36 | 2.56 | 2.35 | 85 | 0.19 |
| r's Ed. | 2.86 | 2.86 | 2.84 | 2.90 | 3.04 | 94 | 0.53 |

NOTE: * p>.05

TABLE 22

The Effects of Varying Degrees of Enrollment Change
On the Courses Taught in Particular Subject Areas

| | School Districts | | | | | | |
|---|---|---|---|---|---|---|---|
| aught<br>n: | Increasing<br>+5 to +35%<br>Mean | No Change<br>+4-4%<br>Mean | Decreasing<br>4-10%<br>Mean | Decreasing<br>11-20%<br>Mean | Decreasing<br>21-80%<br>Mean | dF | F' |
| Arts | 2.59 | 2.64 | 2.53 | 2.80 | 3.00 | 94 | 1.35 |
| udies | 2.59 | 2.64 | 2.84 | 2.80 | 3.04 | 94 | 1.82 |
| cs | 2.72 | 2.42 | 2.79 | 3.00 | 3.04 | 94 | 3.18* |
| | 2.69 | 2.79 | 3.05 | 3.10 | 3.00 | 94 | 1.66 |
| anguage | 2.93 | 3.00 | 3.11 | 3.50 | 3.65 | 94 | 3.09* |
| | 2.59 | 2.79 | 2.89 | 3.10 | 2.91 | 94 | 1.31 |
| l Arts | 2.64 | 2.79 | 2.79 | 2.90 | 2.83 | 93 | 0.37 |
| l Ed. | 2.74 | 2.85 | 2.89 | 3.00 | 2.87 | 91 | 0.36 |
| ive Ed. | 2.71 | 2.93 | 3.00 | 3.00 | 3.05 | 89 | 1.67 |
| Ed. | 2.72 | 2.71 | 2.84 | 3.10 | 2.91 | 94 | 0.98 |
| d P.E. | 2.69 | 2.93 | 2.95 | 2.90 | 3.00 | 94 | 1.35 |
| re Ed. | 3.11 | 2.81 | 2.87 | 3.12 | 3.17 | 78 | 0.93 |
| d. | 1.93 | 2.21 | 1.74 | 2.60 | 1.96 | 93 | 1.65 |
| ory Ed. | 2.38 | 2.25 | 2.42 | 2.89 | 2.35 | 85 | 0.91 |
| Ed. | 2.86 | 2.86 | 2.89 | 3.00 | 3.00 | 94 | 0.29 |

'NOTE: * p> 05

TABLE 23

The Effects of Varying Degrees of Enrollment Change
On the Facility Space Allocated to Particular Subject Areas

| | School Districts | | | | | | |
|---|---|---|---|---|---|---|---|
| Space Allocation Changes in: | Increasing +5 to 35% Mean | No Change +4 to -4% Mean | Decreasing 4 to -10% Mean | Decreasing 11 to -20% Mean | Decreasing 21 to -80% Mean | dF | F' |
| Language Arts | 2.45 | 2.57 | 2.79 | 2.80 | 3.04 | 94 | 2.80* |
| Social Studies | 2.52 | 2.79 | 2.89 | 2.90 | 3.04 | 94 | 2.85* |
| Mathematics | 2.59 | 2.71 | 2.89 | 3.00 | 3.04 | 94 | 2.44* |
| Science | 2.55 | 2.64 | 2.95 | 3.00 | 3.00 | 94 | 2.61* |
| Foreign Language | 2.79 | 3.00 | 3.21 | 3.10 | 3.26 | 94 | 1.32 |
| Fine Arts | 2.31 | 2.71 | 2.94 | 2.90 | 2.65 | 94 | 2.67* |
| Industrial Arts | 2.43 | 2.57 | 2.68 | 2.90 | 2.74 | 93 | 1.20 |
| Commercial Ed. | 2.48 | 2.92 | 2.95 | 2.90 | 2.83 | 91 | 2.12 |
| Distributive Ed. | 2.43 | 2.79 | 2.83 | 2.78 | 3.00 | 89 | 2.77* |
| Home Ec. Ed. | 2.62 | 2.78 | 2.84 | 3.10 | 3.00 | 94 | 1.86 |
| Health and P.E. | 2.52 | 2.93 | 2.68 | 2.90 | 3.00 | 94 | 2.69* |
| Agriculture Ed. | 2.93 | 2.91 | 2.75 | 2.88 | 3.18 | 78 | 0.88 |
| Special Ed. | 1.72 | 2.00 | 1.79 | 2.10 | 2.00 | 94 | 0.52 |
| Compensatory Ed. | 2.27 | 2.25 | 2.32 | 2.56 | 2.35 | 85 | 0.23 |
| Driver's Ed. | 2.69 | 2.86 | 2.84 | 2.80 | 2.91 | 94 | 0.48 |

'NOTE: * $p > .05$

these courses are not necessarily taught. If this allegation is true, one would expect to see a higher number of F statistics and levels of significance on Table 22 which examines the actual courses taught by school districts enrollment category. This data does not support the allegation for, when examined across districts, only the Academic subject areas (mathematics and foreign languages) are experiencing significant reductions in courses actually taught; within-school district comparisons among the fifteen courses reveal that regardless of district enrollment change, all districts are teaching fewer foreign language courses. One other usual feature of these data is that for the high declining districts there are only four subject areas which show a decline (mean above 3.00) while on both Tables 19 and 20 there are six subject areas which show a decline. This indicates that these districts are not making an effort to reduce the number of courses offered like they are in reducing the number of staff in those courses. Apparently school districts are not reducing their comprehensive educational programs as long as they are retaining teachers versatile enough to teach all these courses.

For the districts with increasing enrollments, the number of academic subjects taught are increasing to a greater extent than the vocational subject. This may be due to the fact that there are more possible electives to offer in the academic areas than in the vocational areas. The subject area with the greatest increase in courses taught is special education. This

is true regardless of whether the school district enrollments are increasing or decreasing.

Finally, Table 22 shows the facility space allocated to the various subjects for each of the five enrollment categories of school districts. A larger number of the differences among these means are statistically significant than on the two previous tables. The academic courses have the greatest differences among means, with increasing school districts allocating more space to these subjects. As districts decrease in enrollments, they also decrease the amount of space allocated to these instructional programs. This fact belies the literature which suggests that as school enrollments decline, excess space becomes available and is then allocated to the various existing instructional programs. These data may mean that school districts are getting rid of their excess space in other ways such as selling or leasing.

Responses To The Open-Ended Questions

In addition to collecting quantifiable data to conduct the preceding analyses, the sample questionnaire also included two open-ended questions. The first asked what adjustments school districts have made because of declining enrollments that were not mentioned specifically in the questionnaire. The following is a summary of their responses to this question:

> Declining enrollments have caused school districts to adjust in many ways. Some buildings have been closed, and some schools have been consolidated. Consolidation has resulted in longer busing routes which has increased transportation costs. School systems have reorganized their elementary, junior high, and high school configurations with middle school programs being on the increase. Equipment purchased and replacement cycles have been

. limited with purchasing becoming more centralized. Both teachers and principals have been assigned to teaching positions outside of their expertise. This has necessitated in-service education programs. Services and programs for the handicapped have been added. Bilingual programs are on the increase. Classes are being combined, with combination classes on the increase. More full time aids are being used. Career development centers are being added and more programs are being offered for adults. In many, schools the availability of space has been improved and this can be used for libraries, learning resource centers, artist in residence space, teacher lounges, etc. Poor staff have been eliminated and the better staff have been retrained.

The second open-ended question asked the responding school districts to list what an organization like the Association for Supervision and Curriculum Development (ASCD) could and should be doing to assist school districts in the process of adjusting to declining student populations. Their responses included the following:

(1) Act as a clearinghouse to collect and distribute creative solutions that different school districts have used to provide services to students in the face of declining enrollments.

(2) Conduct regional conferences on the problem of declining enrollments.

(3) Conduct more research on declining enrollment.

(4) Work with state department and universities on revising certification requirements.

(5) Develop curricular materials suitable for teaching two to three grade levels as one class.

(6) Suggest methods of certifying teachers in more than one subject matter area.

(7) Assess the effect of the loss of supervisory personnel on instructional programs and educational quality.

(8) Develop a strong advocacy for keeping adequate staff so schools can continue to offer many "solid" courses.

(9) Publish more articles in Educational Leadership on such topics as:

a) Shrinking enrollments and changes in course offerings.
b) Declining enrollments and staff changes.
c) Declining enrollments and the Federal ruling against mandatory retirement (staff).

## PART III

### Conclusions, Recommendations, and Implications for Further Research

The effects of declining enrollments on instructional programs are just beginning to take shape and form. It will take a few years more before the full impact is felt and assessed. Yet, some effects are inevitable and unavoidable. The best schools can hope to do is anticipate the instructional areas most likely to be affected by declining enrollments, to determine what these effects are likely to be, and to prepare programs of modification and adjustment to accomodate the declines. Educators need not depend entirely upon the predictive quality of their intuitions to prepare for declining enrollments; nor do they have to take purely"reactive stances". While still in the formative stages of development, and somewhat inconclusive, some research data, such as this particular study, are now available which suggest some trends and effects of declining enrollments. Therefore, school leaders do not have to wait until the crisis is upon them before taking any action. Nor, do they have to limit their assessment of the impact of declining populations to fiscal analyses as has been the prevailing pattern until now. This investigation departed from that pattern, and focused instead on instructional effects of declining enrollments. The survey included school districts of different sizes (under 10,000 and 10,000 - 40,000) with different rates of enrollment changes over a seven-year period (1970 to 1977) instead of a single year, and in different regions of the country. The results, and the implications thereof, are generalizable with some degree of confidence.

## Conclusions and Reccommendations

As indicated in Part II of this report, several trends are apparent with regards to the impact of declining school enrollments on instructional programs and personnel. Implicit in each of these are other implications for educational change. These trends and implications fall into the categories of courses or subjects being affected, personnel employability and professional development, and instructional techniques.

The results of this research study support the contention that as overall school enrollments decline, so do student enrollments in the various courses of study. To some degree this pattern is expected. However, declines in course enrollments are not consistent across all subject areas. Nor is the expected reduction in number of courses offered necessarily supported by the data. These differential patterns of decline should be of greater importance to the educational leaders concerned with the constructive accomodation of school enrollment decreases so as not to minimize instructional quality than the fact of the decline per se.

Language arts, social studies and science (what we referred to in Part II as "The Academic Core") as well as fine arts and foreign languages ("The Arts Core") seem particularly susceptible to the negative effects of declining enrollments. These subject areas lose out in several ways, including the number of courses taught, staff assigned to teach these courses, and actual student enrollments. These three factors are closely related, and decline in one (for example, student enrollment) invaribly leads to a reduction in the

others. Undoubtedly, part of these declines is attributable to "natural attrition." That is, as the absolute number of students in a school district declines, so does the number of courses in a given subject area required to accommodate students and the size of student enrollments in these courses. Although a necessary component, is this explanation adequately sufficient to understand the broader impacts of enrollment declines?

While the data presented in Part II of this report do not specify other definitive reasons, several speculative interpretations are possible. First, with the exception of social studies, those subject areas experiencing the greatest amount of declines (i.e., foreign languages, math, fine arts, and sciences) comprise little or no aspects of the general education core most students are required to take to graduate from high school. Whereas, typically students are expected to have three to four units of social studies, only one unit of science and math are required. All other science and mathematic subjects, along with fine arts and foreign languages, fall into the category of "electives." As such they appeal to "selective student audiences," and are easily susceptible to financial cutbacks. As the financial base (e.g., Average Daily Student Attendance) of school districts decline in absolute term with decreasing enrollments, while the costs of education rise in the inflationary economic period, these subjects are the first to be reduced and/or eliminated from school curricula.

Furthermore, beyond minimum requirements, mathematics and the science subjects usually attract academically talented students, with the result being small enrollments per class even in times of high district enrollments. This is also true for the foreign languages. The fact that these classes are on the decline now might further suggest that school districts may be experiencing decline in the ratio of academically gifted students in their total population. Whether there are actually fewer of these students now (in terms of ratio to total population) than in times of increasing enrollments is questionable. Rather, a more plausible explanation is that school districts are minimizing their educational services and instructional options to the academically talented student. It is increasingly difficult in times of high costs, cost-effective analysis of educational productivity, and reduced revenues, to justify the maintenance and staffing of courses with very low enrollments. Therefore, a financially expedient, although not necessarily educational wise, response is the elimination of such classes. Similar responses are probably occurring in other "frill, non-required courses" such as the fine arts.

The apparent decline in a standard, required subject area like social studies is somewhat more difficult to explain. Beyond the natural attrition inherent in declining enrollments, why would school districts be reducing the number of social studies courses being taught? Is this situation more a function of factors other than declining enrollments per se? We are inclined to respond affirmatively to the latter question. It may very well be that declining enrollments are occurring at the same time that state and

local school districts are reducing and/or redefining the number of social studies units required for graduation. These reductions may be a function of the general tenor and tone of the national educational community. These are not times when top priority is given to the kind of human issues which constitute typical content for social studies curricula. Inflation, unemployment, and job-security prompt, instead, instructional emphasis in schools that are more material and pragmatic. Undoubtedly, these "climatic conditions" also partially explain why while social studies subjects are declining, vocational education is increasing. There has been a definite shift in national educational trends from the "human relations and academic skills" of the 1960's to the "vocationalism and get a job mentality" and minimum competency preoccupations of the 1970's. These factors, combined with declining enrollments in general, may help to explain why academic areas in school curricula are declining.

Whatever the reasons for the decline in different instructional areas, the results for students are the same. Apparently school districts, as they decline in total enrollment, are reducing the educational options abailable to students in academic and fine arts courses. This conclusion is supported by the findings of this study that school districts tend to employ minimal use of "alternative education." As enrollments decline school districts may be "homogenizing" instructional programs. If that is indeed true, to the degree that instructional program offerings are

restricted to "bare basics" and identical instructional programs are available to all students, both the possibility for individual differences to be accommodated and the availability of quality educational opportunities are minimized.

A significant implication of this conclusion is readily apparent. Obviously declining enrollment districts cannot continue to teach the same number of courses as they did prior to the onset of the decline. Yet, it is imperative that enrollment declines not be accommodated by restricting opportunities for students to receive both a broad-based "comprehensive education" and opportunities to develop their individual interests and talents. Therefore, it is incumbent upon school districts to find ways to retain courses in areas like fine arts, foreign languages, mathematics and the sciences. One way of doing this is to develop new conceptualizations on "teaching" to experiment with different instructional modes, and to employ educational technology to diversify instructional alternatives. The notion of "teaching," as "one teacher with a class of thirty-five students at a time, for a full semester," may no longer be viable. In some instrances, teaching may come to mean self-instruction and peer teaching through programmed instructional packages. In others it may mean classes being conducted by personnel who are physically placed in a location other than the school where the students are. In still others it may be "modularizing" instruction in some courses - that is, replacing the tradition "semester-time division" with a mini-course arrangement wherein instructional issues receive diffe-

rentiated time allocations in the school schedule based upon the needs of the topic. Of necessity the instructional planning and curriculum development will have to become more imaginative and oriented toward quality control since the time any subject receives in a school year will depend upon the demonstrated capability of that subject's needs, instead of the current prevailing practices of standardized time blocks and in lots of semesters. Instead of the administrative time allocations dictating the curriculum, the reverse would be true -- the curriculum would determine how the school day and year are arranged.

Schools need to seriously pursue the use of educational technology as a means of serving students' needs, maintaining and maximizing curriculum options, and preserving quality education in these times of enrollment declines. Whereas some subjects may have insufficient enrollments to justify their maintenance and staff assigned to teach them, they need not necessarily be dropped from the curriculum. Rather, schools should institute televised teaching as a viable alternative. A teacher in another school within the district, another district, another state, or even an agency outside educational institutions can be video taped while he or she is teaching the class. These video tapes can then be used by schools with small enrollments in that particular subject to teach their students. This instructional alternative, has several attractive qualities for declining enrollment situations: it is relatively inexpensive since most schools are likely to already have the equipment, and video tapes

are far cheaper than the cost of a certified teacher; it can facilitate individualized instruction; it does not require the instructor to be on staff within the district; it facilitates inter-district (as well as inter-agency) cooperation; and it is "portable" and transmitable, both in time and space, for the tapes can be made in another location, easily stored and used repeatedly. This recommendation also illustrates a principle that must increasingly be employed in declining enrollment districts. That is, maximizing educational return for dollars spent and conserving quality education through the employment of alternative, imaginative approaches to the delivery of instructional services.

While academic and arts curriculum cores are decreasing in declining enrollment districts, vocational, compensatory and special education are on the incline. These increases are probably a reflection of current societal conditions, and prevailing trends and emphases in education throughout the country. The last few years have witnessed growing concerns for functional literacy and voational competency in an inflationary economy within a highly technological society--concerns stimulated further by recent standarized test scores showing downward trends in performance in such basic skill areas as reading, communication and computation. School districts have responded by instituting different remediation programs such as reading in secondary schools and in the content areas, and minimum competency testing. These emphases prevail regardless of the student enrollment status --decreasing or increasing -- of school districts.

Additionally, efforts toward the equalization of educational oppor-

tunities are widening in meaning and intent to include populations previously excluded. Of particular significance in this extension of equalization efforts are P.L. 94-142 which mandate mainstreaming handicapped students, Title IX, outlawing educational segregation on the basis of sex, bilingualism and multiculturalism and growing demands for programs for academically gifted and talented students. While the findings in this study do not specify the substantive components of "special and compensatory education," it is indeed plausible that such programs include provisions for the handicapped, gifted and talented, remedial reading and bilingual education. Similarly, the growing interest in vocational education is probably manifested in the form of career awareness, job skill training programs, and distributive education.

In all likelihood, minimum literacy skills, vocational competencies, and special education will continue as priority areas in most school districts for the foreseeable futrue. If this prediction is plausible, then efforts should be undertaken, in both preservice and inservice staff development activities, to prepare instructional personnel accordingly. Three strategies seems particularly worthy of pursuance. First, college students planning to enter the teaching profession should be counseled about the present and emerging instructional areas of greatest needs, and advised to specialize in those subjects. Therefore, college of education students should be encouraged to seek majors in such areas as reading, teaching the handicapped, mainstreaming, bilingual

education, and vocational training. It may even be reasonable to consider mandating all preservice and inservice teachers to receive some training in reading and educating the "exceptional student" (e.g., handicapped, gifted and talented, bilingual, ethnically different, etc.) as a condition for gaining initial certification and renewals respectively.

Second, state departments of education, colleges of education, and professional organizations should increasingly encourage teachers to secure certification in two or more areas of specialization, for a teacher who is qualified to teach more than one subject area is much more employable than one who is certified in a single subject. It also seems wise to encourage school administrators and curriculum coordinators to keep that teaching certification updated and activated. Increasingly, school principals and assistant principals, counselors, and curriculum coordinators/supervisors (especially ) may be called upon to assume some actual classroom instructional, as well as supervisory and managerial responsibilities. This situation may become more and more of a necessity for curriculum coordinators in certain subjects (such as fine arts, social studies and foreign languages) as enrollments in those areas decline and the number of supervisors needed decrease correspondently.

Third, more attention must be given in staff development activities to the systematic professional renewal of instructional personnel. In other words, school districts and professional organizations should undertake concerted efforts to assist staff members in instructional areas experiencing the greatest enrollment declines

to redirect their careers by developing competencies in those instructional areas of greatest need. For example, history and civics teachers who may otherwise be fired because of declining enrollments in the social studies might learn to teach reading and thus continue productive service in the profession. More attention should also be given to interdisciplinary and crossdisciplinary studies. Such approaches may provide a mechanism through which some of contents of subject areas facing the prospect of deletion from school curricula can be salvaged. For instance, while fine arts and foreign languages, as a separate entity, may be deleted or drastically reduced from school curricula, some of their content could be integrated into other subject areas, such as history, language arts, and cultural studies. Some of the content of social studies and science that might be otherwise constricted because of declining enrollments could easily be used as instructional materials in the teaching of reading and other communication skills. Therefore, while the trend toward reducing courses taught, space allocations, and staff assignments in certain subject areas because of overall student enrollment declines may be presently irreversible, this does not necessarily mean that the content and contributions of these subject need to be eliminated totally from the school curricula. Rather they can be preserved by channelling them into stabilized and growing subject areas. Such new instructional arrangements may be essential to the preservation of comprehensive programs and educational quality in times of declining enrollments. Thus, something known as "American studies" may emerge to replace courses previously identified as

American history, literature, music, and art; "Communication" may replace language arts and speech' "human behavior" might combine sociology, political science, economics, religion, psychology and philosophy; and/or "Aesthetic expressions" might integrate such traditionally known courses as writing, drama, music, art, poetry, and literature. Developing greater competencies in principles of curriculum development and articulation, and the processes of curriculum change in instructional supervisory and administrative staff can facilitate this needed refocusing and reorganization of instructional programs. Staff development in these areas with emphasis on conceptual understanding and pragmatic application, should therefore be of prime consideration in the next few years by both school districts and professional organizations alike.

Declining enrollments is a fait accompli, and is likely to continue to grow in significance in the first half of the decade of the 1980's. Dealing efficiently and effectively with this situation without jeopardizing the quality of education available to students will require imagination, foresight, courage, and unprecedented actions. It will require that educators change their entire outlooks, orientations and approaches to dealing with educational problems. Whereas educators have always operated on a "growth mentality" that must now change to one of "decline." Whereas educators typically take a reactive stance to problems and delay action until those problems reach crisis proportions, that too must change. The presence and persistence of declining enrollments will

require that educational leaders increase their predictive abilities, that they become more proactive instead of reactive, that they attend to the causes and effects of the problems, and develop corrective programs in the early stages of problem formation instead of waiting until the problems become incurable and then treating only the symptons to control rather than cure them. Thus, the principle challenge in the mangement of enrollment decreases is to begin a planning process before the problem becomes unmanageable or even before the onset of the actual decline itself.

This planning process should be participatory in nature, involve all concerned parties (parents, teachers, students, administrators, community agencies, business and industry, etc.), and use a shared decision-making format. The goals and objectives of the school district must be clearly articulated as well as the means for achieving them. Such articulation is prerequisite to appropriate and wise decision-making about what instructional program and personnel modifications to make, and when, to accommodage enrollment declinew without jeopardizing the comprehensiveness and quality of the educational opportunities available to students. And, educational leaders increasingly must employ more systematic, long-term planning for resource aggregation and reallocation, and instructional modifications commensurate with multilateral and multidimensional changes.

School districts can no longer operate unilaterally or in isolation if they are to attend constructively to the implications and challenges of declining enrollments. They must cooperate with other agencies and institutions, both in the private and public

sectors. A wide variety of educational programs (for instance, in vocational education, special education, distributive education, compensatory education, sciences, the social studies, and commercial education) can be offered by cooperating with business, industry, and social welfare agencies that would be fiscally impossible if undertaken by school districts alone. Also, plans must be made for both the vertical and horizontal diversification of educational programs. That is, current instructional programs will have to undergo serious reorganizations, new programs will need to be expanded upward and downward to serve new clienteles in both adult and early childhood education, and instructional programs must be re-conceptualized to embrace the principle of life-long learning.

## Research and Service Implications

This present investigation contributes some significant research insights into declining enrollments, and offers empirical support to some of the leading speculative and intuitive allegations about how this phenomenon affects instructional programs. Areas of instructional decline and increase, as well as the directionality of the trend patterns are clearly identified. However, the results are not all inclusive. They raise several questions that deserve further research investigation. While this study establishes, beyond a doubt, that declining enrollment school districts experience corresponding declines in such subject areas as foreign languages, sciences, fine arts, and social studies, it does not reveal the specific nature of these declines beyond number of courses taught,

staff assignments, and facilities allocations. Conversely, the data confirm the contention that special education, compensatory, and vocational education are increasing both within and across school districts, irrespective of whether student enrollments are increasing or decreasing. It would be a worthy endeavor indeed for future research to concentrate on identifying the specific details of the declining and increasing subject area trends. For example, school districts might be employed to explain the exact nature of the decline within an instructional area relative to percentage of student enrollment decreases over a given period of time, which particular subjects and courses have been added and/or dropped with given instructional areas, and why these changes have occurred. We have offered some possible explanations of these changes, but they are merely logical deductions and educated guesses deriving from the findings of the present study, instead of being empirically-based conclusions embedded in the data per se. Such research could serve to substantiate or invalidate our speculative interpretations.

A second need for future research may be classified as "replication." While the current study did solicit information from school districts of different sizes from across the nation, we feel the results are generalizable. We, therefore, recommend that this study be replicated using a much larger sample than the ninety-two school districts included therein. We also suggest that the same enrollment categories (+5 to +35%; -4+4%; -5-10%;

-11-35%; -36-80%) be used for identifying the school districts to be included in the replication study.

A third area of needed research has to do with collecting specific information on how different school systems are responding to and modifying administrative, managerial, and instructional programs to accommodate declining enrollments. Again, this study made some preliminary efforts to elicit these kinds of information, but the efforts were not as well planned and rigorously pursued as they might have been. As a result some of the information, while descriptively powerful, has minimum explanatory power. Such a research focus in the future may produce results that could be invaluable to other school districts as they approach the tasks of coping with declining enrollments. They may even lead to some "precedental do's and don'ts" applicable to any situation wherein school enrollment decline are occurring.

Fourth, some research efforts need to be undertaken soon to examine the impact of instructional reductions on the overall quality of the educational opportunities available to youth, and on their academic achievement. This study asked whether declining enrollments affected educational qualtiy, but the results were inconclusive, and they did not specify kinds of effects on quality. It is important that we know if students are learning less and if the quality of the overall educational experiences are being jeopardized--and in what ways--given the fact that school districts are experiencing decline in the academic and the arts core sourses of study. The results of a more focused and rigorously conducted study on these

questions can be invaluable to educational leaders in making reasoned and reliable decisions about instructional program reorganization plans that will heighten educational quality instead of lowering it.

Although this study asked if staff relocations had occurred in declining enrollment districts, and found support for this question, it did not specify any details of how such relocations were accomplished with minimum stress to both personnel and instructional programs. Therefore, a fifth area of needed future research is an investigation of how school systems are being massaged and manipulated to accommodate instructional and supervisory personnel dislocation. It would be worthwhile knowing which areas these personnel are rechanneled into, the rate of successful relocation, the level of job satisfaction after the relocations and career redirections have occurred, and the degree to which displaced personnel are accommodated in the same system at levels of employment comparable, in terms of fiscal rewards and educational responsibility, to their former positions. Such data will be very helpful to district leadership which must, of necessity, address the issue of faculty cutbacks and relocations as student enrollments decline and the costs of education increase. It might also help them to accomplish necessary staff reorganization plans without extreme stress and anxiety.

In addition to these five areas of implications for future research, several service implications are evident as well. First, ASCD and other leading state, regional, and national progessional organizations should begin to collect and disseminate information on constructive,

imaginative "attending strategies" used by different school districts in coping with the challenges and chaos of declining enrollments. This clearinghouse function could be of great assistance to those districts experiencing declining enrollments which have no idea of where to begin to attack the problem. Second, more carefully designed staff development activities must be conducted wherein participants learn to develop skills and acquire specific techniques for assessing the impacts of declining enrollments on different aspects of the educational enterprise, and learn to cope with them in constructive ways. The ASCD Curriculum Study Institutes, and national conference workshops are natural outlets through which these particular needs can be serviced. Third, ASCD and other comparable professional associations should adopt advocacy positions on instructional programs that are crucial to the overall educational development of youth, and which should not, under any circumstances, be deleted from school curricula because of declining enrollments. One such area we feel falls into this category is the arts core. This advocacy can be easily demonstrated through existing publicity programs, such as the attention given to particular instructional areas in annual conference programs, associational goal priorities and value commitments, journal articles, newsletters and other publications, resolutions and regional conferences. Such an advocacy posture carries with it additional responsibilities for demonstrating how these crucial instructional areas can be preserved at minimal costs, and in formats that are not oppostional to the realities of enroll-

ment declines. Fourth, professional organizations should develop and disseminate field-tested techniques for achieving instructional reorganization and program refocusing to preserve the quality, comprehensiveness, and optimization of educational alternatives availalbe to students at minimal costs, both in terms of fiscal and personnel resources.

Although previous data on student-teacher ratios relative to quality of performance are inconclusive, professional organizations should explore the feasibility of reducing these ratios as a fifth means of coping with declining enrollments. There is no shortage of ideological and theoretical support for lower student-teacher ratios, even though empirical data, to date, is less than totally convincing. However, it seems reasonable for professional organizations to take the lead in calling for a reassessment of the acceptable levels of student-teacher ratios in declining situations. It is implausible to continue, either by benign neglect or active advocacy, to support a student-teacher ratio formula that was established in growth periods. Instead, it seems more reasonable to scale down the student-teacher ratios to reflect the overall downward trends in the total availability of students. Such a technique might serve to offset drastic and impulsive cutbacks in instructional staff. While smaller student-teacher ratios are apparently a logical response to enrollment declines, whether they will accelerate the qualtiy of teaching and student performance is yet unknown. This question must await carefully planned and conducted research investigations.

Undoubtedly, many other research and service implications can be derived from the present study on the impact of declining enrollments on instructional programs and supervisory practics. The ones offered here are not intended to be exhaustive.

Rather, they are illustrative of the kinds of research and service activities school districts, state departments of education, and professional organizations should consider pursuing, with the intent of: (1) developing a more comprehensive data-based understanding of the magnitude and impacts of declining enrollments; and (2) developing constructive, well-organized, long range planning programs to effect instructional changes such that declining enrollments are accomodated without jeopardizing educational quality, without undue duress to instructional and supervisory personnel, and without unnecessarily constricting student opportunities for optimal intellectual, social, emotional, and cultural growth in American public schools.

PURDUE UNIVERSITY

DEPARTMENT OF EDUCATION

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# THE EFFECT OF DECLINING ENROLLMENTS ON SCHOOL DISTRICT INSTRUCTIONAL AND SUPERVISORY PROGRAMS

A Project Sponsored by the Association for Supervision and Curriculum Development (ASCD)

## Questionnaire

DIRECTIONS: Please answer all questions in the spaces provided. Use factual information wherever possible. If actual data is unavailable, estimate the response as accurately as possible.

## I. DEMOGRAPHIC INFORMATION

1. Populations:

| | 1970 | 1978 |
|---|---|---|
| a. Population, residing in district | _____ | _____ |
| b. Elementary (K-6) | _____ | _____ |
| c. Secondary (7-12) | _____ | _____ |

2. How many square miles does your district encompass? _____

3. Total assessed valuation? _____ _____

4. What is the percentage breakdown of the following racial/ethnic groups to the total student population?

   a. White _____
   b. Latino _____
   c. Asian-American _____
   d. Black _____
   e. Other (please specify) _____

5. Is your school system desegregated? _____ If yes, was desegregation voluntary or court ordered? _____

6. What is the median income in your district? _____

7. What percentage of your high school graduates attend college? _____

8. a. What is your high school "drop-out" rate? _____
   b. Has the drop-out rate changed since 1970? _____
   c. If yes, how has it changed? _____

## II. STAFFING POLICY ISSUES

1. Since 1970, has your staff shown a median age change? _____ If yes, are teachers older or younger? _____

2. How has your teacher retirement policy been affected by student population changes? (check one)

   a. instituted early retirement incentives _____
   b. increased retirement age _____
   c. no change _____
   d. other (please explain) _____

3. How have student population changes affected the certification requirements of new employees? (check as appropriate)

   a. require one subject area certification only _____
   b. require more than one subject area certification _____
   c. require only temporary or provisional certification _____
   d. require permanent certification _____
   e. other (please explain) _____

4. a. Have you changed the use of part-time institutional staff? _____ How? _____
   b. Have you changed the use of volunteer staff? Remained the same; increased; decreased? _____
   c. Have you changed the use of student teachers? _____ How? _____

5. Have changing enrollment patterns resulted in the need to relocate staff? _____ If yes, in what way? _____

6. Since 1970, has your district cooperated with other school districts or regional agencies to provide joint services? _____ If yes, what services have been jointly provided and what other institutions cooperated jointly?

| SERVICE | AGENCY |
|---|---|
| _____ | _____ |
| _____ | _____ |

## III. INSTRUCTIONAL PROGRAM POLICY ISSUES

1. a. Has your school district developed or participated in programs or in-service workshops for training or restraining of staff? _____
   b. If yes, what were the primary areas and/or emphases of these programs?

   _____

   _____

2. a. Since 1970, has your district changed the student support services provided (i.e., guidance counseling, remedial reading, etc.)? _____
   b. If yes, which programs were affected and how were they affected?

| SUPPORT PROGRAM | ACTION TAKEN |
|---|---|
| _____ | _____ |
| _____ | _____ |

3. Has the replacement cycle of instructional materials been changed since 1970? _____ If yes, how? _____

_____

4. Since 1970, has your school district utilized new types of instructional methodology? (check appropriate responses)

a. alternative education _____
b. team teaching _____
c. individualized instruction _____
d. computerized instruction _____
e. other (please explain) _____

5. Have changing population patterns affected the number and types of administrative (i.e., Assistant Superintendents, Principals, and Assistant Principals) positions in your district? _____ If yes, how? _____

_____

_____

6. Have changing population patterns affected the number and type of instructional supervision positions, (i.e., curriculum coordinators, department heads) in your district? _____ If yes, how? _____

_____

7. Has the quality of your educational program changed as a result of a change in student population? _____ How did it change? _____

_____

8. What adjustments not already covered in this questionnaire has your district made as a result of changes in your student enrollment?

9. What should an organization like ASCD be doing to aid school districts in the process of adjusting to changing student population?

IV. Over the past ten years, many changes have occurred across the country concerning the programs offered by various school systems. Please respond to the following questions indicating the extent (or lack of) change in the various programs in your school district comparing the conditions that existed in your school system in 1970 with the conditions that exist in your school system in 1978. Indicate your response by circling 1 if increased substantially (i.e., greater than 25% change), 2 if increased slightly (i.e. 5% to 25% change), 3 if remained the same (i.e. +5% to -5% change), 4 if decreased slightly (i.e. -5% to -25% change), and 5 if decreased substantially (i.e. greater than -25% change). Please answer all questions.

| PROGRAM | ENROLLMENT | STAFFING | COURSE OFFERINGS | COURSES TAUGHT | SPACE ALLOCATED |
|---|---|---|---|---|---|
| | How has the percentage of students participating in the program changed in proportion to the total student population? | How has the number of staff in each program changed as a % of the total number of staff in your district? | How has the number of courses offered in each program area changed? | How has the number of courses actually taught in each program area changed? | How has the amount of classroom space allocated to each program changed? |
| Language Arts | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Social Studies | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Mathematics | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Science | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Foreign Languages | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Fine Arts | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Industrial Arts | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Commercial Ed. | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Distributive Ed. | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Home Economics Ed. | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Health & Phys. Ed. | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Agriculture Ed. | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Special Education | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Compensatory Ed. | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |
| Driver's Education | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |

| | |
|---|---|
| 1 = > 25% | (increase) |
| 2 = 5% to 25% | (increase) |
| 3 = +5% to -5% | (same) |
| 4 = -5% to -25% | (decrease) |
| 5 = > -25% | (decrease) |

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